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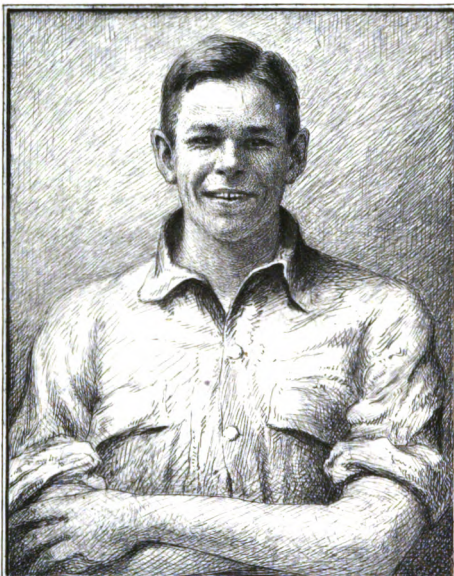
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**A HISTORY
OF
THE ARMY ORDNANCE SERVICES**

A HISTORY OF THE ARMY ORDNANCE SERVICES

by
MAJOR GENERAL A. ^{Arthur}FORBES C.B. C.M.G.

LATE R.A.O.C.

VOLUME ONE
ANCIENT HISTORY



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PREFACE

AFTER the Great War I had charge of the inspection branch responsible for passing all the equipment, non-technical stores and clothing of the British Army, as distinguished from its military outfit of munitions of war. In 1922, in a speech at the annual dinner of the civilian experts employed on this duty, one of the Principal Viewers remarked that he believed this special branch of army work came into existence owing to the scandals brought to light during the Crimean War. On this point I was profoundly ignorant, and I felt that it behoved me to know something about the origin of the service of which I had charge.

To verify that the statement was correct was simple ; but in the course of my investigation I found it impossible to stop at what proved to be merely a milestone on a road stretching away in perspective to a far more distant past. Moreover, examination of the road involved exploration of the surrounding country, inspection being bounded on the one side by procurement and on the other by supply. Thus gradually a vista opened up embracing the whole range of duties now styled The Army Ordnance Services from the very earliest days when anything in the nature of an organization existed to provide the soldier with equipment and clothing, arms and ammunition. It is in this way that the first two volumes of this history came to be written ; the third, describing the work of the Ordnance during the Great War, being added to bring the subject up-to-date.

It has been necessary to cover a wide ground. Questions of general army administration and even of national polity have had to be discussed briefly on the one hand, while on the other an account of the development of the arms, equipment and uniform now supplied by the Ordnance has been essential. These tributary streams have immensely influenced the flow of the main current, at first a mere rivulet, and a History of The Army Ordnance Services would be unintelligible without reference to factors so important to their growth.

The essay on the Broad Arrow is germane to the subject only in the sense that this symbol has been the hall-mark of the Ordnance for centuries past. That on uniform is even less germane. But no one who attempted to describe the soldier's dress at different periods could fail to notice the immense importance attached to military sartorial art, even at times when the efficiency of arms and equipment was neglected. I was intrigued to discover why this should be so. The subject, so far as I know, has never been investigated and seemed worth discussion in a history of the branch of the army which clothes the soldier. Unless, however, the reader is interested in antiquarian lore, he will do well to skip these chapters which have no direct bearing on the main subject.

The greater part of my information has been gleaned from the War Office Library, and I have to thank Mr. Baldry, the Librarian, for putting me on the track of numerous sources of information. I have not attempted to compile a complete bibliography, but a list of the principal military publications that I have found useful, and which are not to be found in general reference libraries, is given in an appendix. Of these Fortescue's monumental *History of the British Army* has been the most valuable, together with Grose's *Military Antiquities*. On everything concerning the epoch of the Commonwealth Grose is strangely silent, but the lacuna is ably filled by Sir C. Firth's book on Cromwell's Army. From towards the close of the eighteenth century onwards ample materials exist in the form of official publications—reports of Commissions and Committees, Royal Warrants, Army Orders, etc.

I am indebted to Staff Sergeant Ruskin, R.A.O.C., for the interesting series of letters of the Board of Ordnance given in Appendix VII, Vol. I, and for other help; also to Major Vallon, O.B.E., M.C., and Major Buttenshaw, D.S.O., both of the R.A.O.C., for a number of sketches reproduced as illustrations. Those of the R.A.O.C. who, by their diaries and other records, have helped towards the compilation of Volume III, dealing

with the Great War, are too numerous to mention beyond those whose names are quoted in the text. I have to thank Colonel A. R. Oldfield, D.S.O., R.A.O.C., for undertaking all the business arrangements incidental to publication, a laborious undertaking. It is owing to his energy that the book sees the light of day. Lastly, I have to acknowledge my deep obligation to Major Asser, Editor of the *R.A.O.C. Gazette*, who has throughout been a guide, philosopher and friend, revising my drafts and furnishing me with numerous valuable suggestions.

CONTENTS

PART I

THE CONQUEST TO THE RESTORATION OF THE MONARCHY

	PAGE
<i>Chapter I. THE MEDIEVAL AGE</i>	3
Origin of scales of equipment and necessities. Origin of the Ordnance Office. Origin of payment in return for service and the abuses to which it gave rise. Summary of administrative progress. Equipment of the early English soldier. Knighthood's armour and equipment. Infantry dress and equipment; the archer. The cannon and musket.	
<i>Chapter II. THE TUDOR AND FIRST STUART PERIOD</i>	27
Uniform in the reign of Henry VIII. The Ordnance Office. Tudor weapons and armour. System whereby troops were clothed and equipped. Frauds and impositions connected therewith. Scale and style of uniform in the Elizabethan era. The army during the reigns of James I and Charles I. First attempt to standardize the soldier's equipment.	
<i>Chapter III. THE COMMONWEALTH</i>	58
The soldiery of the Civil War. The New Model Army. Armour and weapons. Camp equipment. Clothing. The Ordnance Office. Honest administration.	

PART II

THE RESTORATION TO THE INDEPENDENCE OF AMERICA

<i>Chapter IV. ARMY ADMINISTRATION AFTER THE RESTORATION</i>	79
Birth and growth of Standing Army. Attitude of the nation to the Army. The soldier's life. The soldier's pay and what it had to provide. Corrupt practices. The germ of a War Office.	
<i>Chapter V. THE BOARD OF ORDNANCE</i>	94
Expansion of duties and formation of a Board of Ordnance. Its constitution and regulations. Its abuses and duties. Ordnance establishments. Method of clothing and equipping the Gunners and Sappers.	

	PAGE
<i>Chapter VI. DETAILS OF UNIFORM, EQUIPMENT AND ARMS</i>	112
Post-Restoration uniform and equipment. The grenade, musket and bayonet. The gun and its ammunition. Uniform in the eighteenth century. Military tailoring as an art. Light infantry and cavalry. Camp equipment.	
<i>Chapter VII. THE BOARD OF GENERAL OFFICERS</i>	134
Tentative arrangements for clothing the army. Marlborough's Clothing Warrant of 1707. Its abuse. Necessaries. Survey of administrative progress	

PART III

THE INDEPENDENCE OF AMERICA TO THE CRIMEAN WAR

<i>Chapter VIII. ORDNANCE SERVICES ADMINISTERED REGIMENTALLY</i>	149
The army established on a firmer basis. The Pay Office reformed. Scales of necessaries introduced. Abortive attempts to remodel the system of clothing and equipping the army. Details of the system.	
<i>Chapter IX. ORDNANCE SERVICES ADMINISTERED BY THE STATE</i>	170
Ordnance Office reforms. The Barrack Department. Mr. Trotter and the Military Store Department. The Commissariat. Supply organization during the Napoleonic Wars summarized. The Ordnance Office after Waterloo. Reforms initiated by Wellington when Master General.	
<i>Chapter X. DETAILS OF UNIFORM, EQUIPMENT AND ARMS</i>	208
Incessant changes in uniform. Undress uniform. Neglect of serviceability. Standardization of accoutrements. The saddle. Camp necessaries. Small arms and ammunition. The gun and its ammunition.	
<i>Chapter XI. THE CRIMEAN WAR</i>	257
Unreadiness of the army. Its administrative hierarchy. Contrast between the Peninsula and the Crimea. Gross mismanagement in England. Chaos at the seat of war. Privations of the troops. Tragedy of the hospitals. Breakdown of control. Reconstruction.	

LIST OF APPENDICES

	PAGE
I. MASTERS OR MASTER GENERALS OF THE BOARD OF ORDNANCE	275
A LIST OF THE CHIEF OFFICERS RESPONSIBLE FOR ORDNANCE SERVICES	276
II. THE ARMS AND MOTTO OF THE BOARD OF ORDNANCE	278
III. THE EARLIEST PRINTED VOCABULARY OF STORES	282
IV. FORMS OF WARRANT AND INDENTURE GOVERNING THE ISSUE OF ARMS	285
V. PROOF OF GUNS AND AMMUNITION—1783 AND 1855	287
VI. A LIST OF ORDNANCE DEPOTS AT VARIOUS DATES	290
VII. EXTRACTS FROM CORRESPONDENCE BOOKS, TIPNOR MAGAZINE—1802 TO 1854	293
VIII. SCALES OF CAMP EQUIPMENT PRIOR TO THE CRIMEAN WAR	305
IX. SCALES OF NECESSARIES—1792	306
X. WELLINGTON'S COMMENTS ON IRREGULARITY IN DRESS AND ILLEGAL STOPPAGES OF PAY	308
XI. WELLINGTON'S INSTRUCTIONS CONSEQUENT ON UNPUNCTUALITY IN THE ISSUE OF CLOTHING	310
XII. THE SOLDIER'S BUDGET—1833	312
XIII. THE SOLDIER'S LOAD—1853	314

LIST OF ILLUSTRATIONS

	PAGE
MAN-AT-ARMS (FANCIFUL SKETCH)	14
CRUSADER (FANCIFUL SKETCH)	16
ARCHER (FANCIFUL SKETCH)	23
CROSS-BOW MAN (FROM MEYRICK'S ANCIENT ARMOUR)	25
ANCIENT BREECH-LOADING GUN DREDGED FROM WATERFORD HARBOUR	26
YEOMAN OF THE GUARD ATTENDING QUEEN ELIZABETH IN A ROYAL PROGRESS (FROM GROSE'S MILITARY ANTIQUITIES)	29
MUSKETEER (FROM GROSE'S MILITARY ANTIQUITIES)	39
GROUP OF ELIZABETHAN SOLDIERS (FROM MEYRICK'S ANCIENT ARMOUR)	41
HALBERDIER	53
SOLDIER OF THE TIME OF CHARLES I (FROM THE RECORDS OF THE ROYAL SCOTS)	55
MUSKETEER (A REPRODUCTION FROM CROMWELL'S HOUSE AT HIGHGATE COPIED FROM A SHORT HISTORY OF THE ENGLISH PEOPLE— GREEN)	64
FLINT-LOCK MECHANISM	66
CAVALRYMAN (FROM A SHORT HISTORY OF THE ENGLISH PEOPLE— GREEN)	67
GRENADIER OF 1715 (REPRODUCTION OF A WOODEN EFFIGY AT CARLISLE, FROM THE HISTORY OF THE 2ND QUEENS. VOL. III)	115
HIGHLAND SOLDIERS (FROM GROSE'S MILITARY ANTIQUITIES)	123
PRIVATE OF THE KING'S OWN REGIMENT OF FOOT, AND TROOPER ROYAL NORTH BRITISH DRAGOONS, 1742 (FROM A COLLECTION OF ORIGINAL PLATES IN THE WAR OFFICE LIBRARY)	126
PRIVATE, GRENADIER COMPANY, 1768. (RECORDS OF THE ROYAL SCOTS—FROM A CONTEMPORARY MANUSCRIPT IN THE PRINCE CONSORT'S LIBRARY, ALDERSHOT)	128
LIGHT TROOPER (FROM THE HISTORICAL RECORDS OF THE 11TH HUSSARS)	130

	PAGE
LIGHT DRAGOON HELMET (FROM THE HISTORY OF THE 13TH HUSSARS)	132
LIGHT DRAGOON HELMET (FROM BRITISH MILITARY PRINTS. W.O. LIBRARY)	208
LIGHT INFANTRYMAN, 1791 (FROM BRITISH MILITARY PRINTS. W.O. LIBRARY)	209
90TH LIGHT INFANTRY (FROM BRITISH MILITARY PRINTS. W.O. LIBRARY)	212
HIGHLANDER (FROM THE JOURNAL OF THE SOCIETY OF ARMY HISTORICAL RESEARCH)	213
RIFLEMAN (FROM AN OLD MS. COLLECTION OF NOTES ON THE RIFLE BRIGADE IN THE W.O. LIBRARY)	214
LIGHT CAVALRY JACKET—OFFICERS (FROM THE JOURNAL OF THE SOCIETY OF ARMY HISTORICAL RESEARCH)	215
ARTILLERY HEADDRESS (FROM MACDONALD'S HISTORY OF THE DRESS OF THE ROYAL ARTILLERY)	} 217
CHACOS: (a) PRIVATE'S, 1800, (b) OFFICER'S, 1811 (FROM THE RECORDS OF THE ROYAL SCOTS)	
(a) LIFE GUARD'S HELMET, (b) 17TH LANCER'S HELMET, (c) HORSE ARTILLERY CHACO, (d) GUARDSMAN'S BEARSKIN. (a), (b) AND (d) FROM BRITISH MILITARY PRINTS, AND (c) FROM THE HISTORY OF THE DRESS OF THE ROYAL ARTILLERY	220 & 221
(a) CHACO OF 1815—OFFICER'S, (b) ALBERT CHACO—PRIVATE'S (FROM THE RECORDS OF THE ROYAL SCOTS)	223
UNDRESS UNIFORM, 1798 (ROBERTS' MILITARY INSTRUCTIONS. W.O. LIBRARY)	225
CAVALRY POUCH BELT	233
FIFTEENTH CENTURY SADDLE-TREE IN THE TOWER OF LONDON	234
CAVALRY SADDLE AND TRAPPINGS, 1751 (FROM A DRAWING IN THE W.O. LIBRARY)	235
HUSSAR SADDLE AND PILCH SEAT (COPIED FROM A SADDLE AT WOOLWICH)	237

LIST OF ILLUSTRATIONS

	XV
	PAGE
BROWN BESS	241
EARLY TYPES OF RIFLE CHAMBER	244
EARLY POINTED BULLET	245
GREENER BULLET	245
BAKER RIFLE AND BELTED BULLET	246
MINIÉ RIFLE BULLET	248
ENFIELD BULLET	249
SHRAPNEL SHELL	253
TWO QUICK-MATCH TUBES	254
FRICTION TUBE	255

NOTE.—I am asked to state that the illustrations from the *Records of the Royal Scots* were the work of the late Major J. C. Leask.

PART I
THE CONQUEST TO THE
RESTORATION OF THE MONARCHY

VOL. I—B

CHAPTER I

THE MEDIÆVAL AGE

FROM the earliest times since mankind associated together in communities, there has probably been, in every race, a well-understood maxim that all able-bodied men were bound to turn out, with such warlike equipment as they might possess, in defence of their soil and communal property.

This was so in the England of the ancient Britons, divided into tribal areas; and in the time of King Alfred a rather more closely knit organization existed, the wealthier being required to provide themselves with weapons. Thus when, at the Conquest, the Normans introduced liability for service in defence of country as a main principle of the Constitution, the practice would have been well understood.

William the Conqueror rewarded the leaders who followed him to England by giving them grants of land, in return for which they were bound to find and equip so many fighting men; and in 1132 a Commission of Array was appointed whose duty it was to send into the country officers in whom the King could confide to muster and array, or set in military order, the inhabitants of each district.

This was followed in 1181 by the Assize of Arms, an important landmark which lays down the scale of equipment to be provided, and which is in fact the earliest example of a clothing and equipment regulation extant. The Assize of Arms enacts that:

Every holder of one Knight's fee shall have a coat of mail, a helmet, a shield and a lance; and every Knight as many coats of mail, helmets, shields and lances as there are fees in his domain.

Every free layman having in chattels or rent to the value of sixteen marks shall keep the same equipment.

Every free layman having in chattels or rent ten marks shall keep a habergeon,¹ a chaplet (hat) of iron and a lance.

All burgesses and the whole community of freemen shall have a wambais,¹ a chaplet of iron and a lance.

¹ See page 15.

It contains strict injunctions against the selling, pawning or parting with arms. No Jew could have possession of any coat of mail, nor were any allowed to be taken out of the country without the King's permission. When a man died his equipment was to become the property of his heir, and the King would punish corporally in their limbs, and not in their goods or lands, any who were without their proper equipment.

The Assize of Arms was replaced in 1285 by the Statute of Winchester under which :

Those with lands to the yearly value of £15 and 40 marks in goods were to possess a habergeon, iron head piece, sword, knife and horse.

Those with £10 to £15 in land or chattels, or the value of 40 marks—the same except for the horse.

Those with 100 shillings or upward in land—a doublet, head piece of iron, sword and knife.

Those with 40 to 100 shillings annual rental—a bow and arrows with a knife.

Those with under 40 shillings—gisarmes,¹ daggers and other small arms.

Those with less than 20 marks in chattels—swords, daggers and other inferior weapons.

All others authorized to keep bows and arrows might have them out of the forest. A review of these arms was to be made twice a year by two Constables in every Hundred, who were to report the defaulters to the Justices and present them to the King in Parliament.

This very important historical document which, though sometimes in abeyance, was in force for many centuries, provides that every freeman between fifteen and sixty years of age, of whatever rank and degree, was to have "harness (equipment) for to keep the peace according to the antient assize," and in it the horse and bow are for the first time mentioned. In fact, the result was a census by districts, throughout the Kingdom, of the number of able-

¹ Some form of improvised weapon, such as a scythe blade fastened to a haft.

bodied men with their arms, armour, horses, saddlery, etc., and it is to this organization that the militia, organized on a county basis, owes its origin.

But if this system for providing arms and equipment is of ancient origin, an informal arrangement whereby the soldier could replenish his necessities is probably even older. For the benefit of the uninitiated, it may be explained that the soldier's "necessaries" consist of those articles which he requires for his daily life in addition to the uniform, equipment and arms needed in battle. At present they consist of his underclothing, shaving and washing tackle, various brushes, knife and fork, thread and needles, etc.; and though man's needs were simpler in the past, there was no doubt always some portion of his kit that needed replenishing if he was likely to be away from home for any length of time.

From the earliest days the Church was the centre of village life, where the people assembled for sanctuary in time of peril with such possessions as they could gather together; and from this there arose the custom of exposing for sale in the churchyards such articles as the soldier was likely to want before going to war. The earliest Ordinance of War extant, in the reign of King John, relates to this procedure, and appoints by name two Marshals for England and two for Normandy, who have to take oath "that they will cause the peace of the Church to be well and faithfully obeyed so that, if it should be found necessary to take anything from the Churches or churchyards, for the wants of the army, the superintendents of the Churches shall remain there in order that those things which the army may want shall be exposed to sale and that before they are removed, they may be paid its value. That if by chance the said superintendents of the Churches should be absent or have neglected it, the prices of the things taken shall be deposited in the Church for the use of those to whom the said goods belonged." It was the custom from very soon after the Conquest to provide conduct money to enable the soldier to pay his way to the rendezvous, and probably this was used to pay for such necessities.

One other military institution owes its beginnings to this period. The actual origin of the Ordnance Officer is lost in the mists of antiquity, but it is not unlikely that such an official came into being in England at the Conquest, for he was originally nothing more or less than the Keeper of the King's wardrobe or armoury (the words are at this day synonymous in French) situated at the Tower of London, a Roman castle restored by William the Conqueror.

The earliest trace of this office occurs in the year 1299. According to an old document (published in 1787 by the Society of Antiquaries) the Keeper of the King's wardrobe was at that time also the treasurer and accountant for military expenditure, and a number of engines of war such as battering rams, slings and catapults are mentioned for the care of which he was responsible. At that period he was styled Attiliator. From this date onwards there are numerous records of an Attiliator or Artillerator being appointed at the Tower with a wage from the Crown as a maker or provider of military implements; the post being several times held by members of a family named Conrad.¹

As the bow became the principal arm of the foot soldier some sort of standardization would be important for accuracy, and the expenditure of arrows would have been heavy. Hence it is not surprising to read that in 1338 the holder of the appointment was directed "to buy 1000 bows, 4000 bow-strings, and 4000 sheaves of arrows of an ell in length with steel heads, which the King has ordered to be purveyed in the realm and sent to him beyond the seas with all speed. If he cannot find the full number of bows and arrows, he is to buy wood for bows and arrows, feathers to wing the arrows with, and iron

¹ "January 3rd, 1320. Coventry. Appointment of Blaise, son of William Conrod, deceased, to the office of military implement maker (attiliatoris) in the Tower, during good behaviour, as held by his father." Quoted in the *Journal of the Society of Army Historical Research*, July-September 1925. The word is much older than the gun. Its exact derivation is obscure, but the base is the Greek root "ar," to join or fit together, as applied to missile weapons generally. Artillery, artificer, arsenal, archer, all have this root.

or steel for their heads, as may be required, to hire makers so as to have them ready as soon as possible, and to deliver them when made to John de Flete to be sent to the King."

With the advent of the cannon the office acquired greater consequence, the casting of guns and making of gunpowder being new and difficult arts. In 1414 one Nicholas Merbury was appointed to be "Master of our Works, Engines, cannon and other kinds of Ordnance for War" with John Louth as Clerk, and from thence onwards a regular succession of Masters and Clerks at the Tower can be traced.

This is the first record of a Master of Ordnance or Ordinance, a title which replaced that of Attiliator. The word is derived, according to Lord Coke, the great lawyer of Queen Bess' reign, from some old Ordinance, not now extant, regulating the bore, size and bulk of cannon. The explanation is no doubt correct, for standardization, useful in the bow, would have been far more so in the gun. There were many old Ordinances regulating details of military equipment. One dealing with the supply of necessities has been quoted and another, dated 1406, directs that the heads of all arrows and quarrels are to be well boiled, brazed and hardened, and requires that the maker's name be stamped thereon. Other Ordinances fix the price of bows and arrows, and direct that bows of yew, at one time scarce, are only to be used by those of a certain degree of skill. Many of these ancient laws fell into disuse and were lost, but others survived and were gradually embodied into military codes, which in time developed into regulations for the army.

The scope of work of the Ordnance in time of war can be gauged by two Royal Warrants of the year 1418. These direct John Louth with John Bennett of Maidstone, mason, to impress 7000 stone cannon balls of various size, and to procure workmen and materials to make 300 great shields for cannon, 80 blocks, 7000 tampons (wads?), 50 wooden yokes for draught oxen, 100 chains, 12 large cannon carriages and 20 barrels of willow carbon gunpowder.

At a later date the Master General of Ordnance became the head of what are now the Royal Regiment of Artillery and the Corps of Royal Engineers, the scientific Corps employed in fortress and siege work. His original function, however, as these details show, was in connection with the supply of war matériel; and thus the Royal Army Ordnance Corps, now responsible for the custody and maintenance of all the warlike equipment of our modern army, can claim to be his most direct lineal descendant, though there was a long road to be travelled, with many turnings, before this goal was reached.

Another line of development must next be traced. The liability for service introduced by Norman rule only applied to defence of the realm, and for a maximum period of forty days in the year, which did not suffice for a campaign overseas. Partly for this reason, and partly to curb the power of the Barons and enable the King to control the army instead of being dependent on his vassals, the "Scutage" or "Shield" Tax which sanctioned payment in place of service was enacted in 1159.

This method of raising troops quickly found favour. A pay roll of Edward I in North Wales, of the year 1282, which has survived, contains numerous entries such as the following:—"Saturday next after the Feast of the Assumption of the Blessed Mary at Rothelan paid to Geoffry le Chamberlin, for the wages of 12 cross-bow men, 13 archers for 24 days, viz. from the day of the Assumption of the Blessed Mary to the Vigil of her Nativity, each day being reckoned, each cross-bowman receiving by the day 4d. and each archer 2d. . . . £7:8:0." A similar entry refers to 53 captains each in charge of 20 archers. Money was little used as a medium for exchange in mediæval times. It was a usual practice to provide food, shelter and raiment in return for service, and no doubt the leader of these small bodies found what his men required out of the pay which passed through his hands.

By the time of Edward II the practice of hiring small bodies of men for short periods was further developed. The King now entered into Indentures (the origin of the

modern military term indent) with leading men who, in return for a fixed periodical payment, undertook to supply a considerable force of horse and foot for a fixed term of years, a portion of the first instalment being issued in advance as imprest money to provide for the initial outlay. The leader in fact became responsible for the whole interior economy of his force; its arms, clothing and equipment, horses, saddlery, food and accommodation.

Now it is easy to see that the system of raising and maintaining troops by means of Indentures at so much a head was very liable to abuse. It became in the leader's interest to keep his force under establishment and pocket the money he thus saved. This might originate from natural causes: perhaps a man was killed or invalided, and could not be immediately replaced; but it was lucrative and soon grew into a custom. Another practice was to substitute a broken-down screw for a sound horse, to check which horses were branded, the earliest known example of army property being marked for the purpose of identification.

The Indentures usually provided that men shall be "sufficiently abited"—that is, shall be provided with a proper outfit of shoes and other necessities; but it appears that some captains were in the habit of making deductions from the pay of their men to purchase necessities, for an Act of the eighteenth year of the reign of Henry VI forbids any stoppage except on account of coats, viz. ten shillings a gown for a gentleman, and six shillings and eightpence for a yeoman if hired for half a year. In the reign of Edward VI these sums were fixed at thirteen and fourpence and six and eightpence a year respectively.

In the campaigns of the Black Prince twopence a day was the lowest rate of pay and the archer got threepence, or sixpence if mounted for mobility, when he was called a hobiler archer. But little of this went into his pocket. Twopence a day was the wage of the agricultural labourer who would earn £2 15s. a year or perhaps £3 with the aid of a wife during harvest, though most of this would be paid in kind. By far the greatest expense was food,

which cost from 1½d. to 1¾d. a day, the rent of a cottager's tenement being only about 1s. 2d. to 2s. a year. The soldier's pay covered the whole cost of his maintenance and the mounted man got a higher rate because there was a horse to be found and fed as well. Even so it is clear that the archer, with a wage fifty per cent higher than that of the labourer, was not badly off; and the soldier's profession was one of repute.

On account of the irregularities which occurred under the system of raising troops by Indenture and contracting out for their maintenance, musters by Commissioners of Array became even more important, being the only check on malpractices. One old order directs them "to muster men, armour and horses . . . and to order every captain to take often musters and views of his band, seeing them harnessed with weapons and armour complete," and another requires that "no man make answer to two names." But it was not difficult to hoodwink the Muster Master. Stray men would be collected for the occasion and provided with sufficient arms and equipment to make them pass as soldiers; and the extent to which this practice came in time to prevail can be gauged from the fact that the phrase "good enough to pass muster" is even now a colloquialism. During the campaigns of the Black Prince, musters were held once a month, and there were strict injunctions that pay was to be withheld for all absentees or for men improperly equipped or mounted.¹

A further development took place when a period of peace followed the wars of the Black Prince. The system

¹ As an item of interest it is worth recording that muster parades were only abolished in 1902, long after the purpose they were intended to serve had passed away. They were held everywhere on the same day, the first of each quarter, an old custom to prevent men attending two different parades; and as every man had to be present they were the sole occasions on which some of the more permanently employed, officers' mess cooks, etc., wore their uniform. After calling the roll, a few of the more important rules whereby the soldier should govern his life were read out and the parade was dismissed. In some regiments there was a more exact formality; each man's Christian and surnames were called and he responded by calling his regimental number. The two were checked together, after which the man was dismissed to prevent the possibility of any answering to two names.

of hiring bodies of troops had led many to adopt the profession of arms who now found themselves without employment. These banded themselves together and formed bodies of mercenaries to fight for anyone who would employ them, the officer taking rank and being rewarded according to the number of men he furnished. If any officer wished to retire he could sell his post to the highest bidder. These soldiers of fortune fought all over Europe and, though they produced some fine leaders, they brought the profession of arms into evil repute, being wont to indulge in organized robbery and blackmail when not employed in their legitimate trade of war. It is in this way that the purchase of commissions crept into the British Army, a traffic that became a fruitful source of evil in years to come. The officer, having paid for his post, sought to recoup his outlay, and rich men who coveted distinction obtained posts for which they were totally unfit.

Progress can now be summed up. That there was any very precise and consistent scheme for raising, arming and equipping troops during this epoch is not to be supposed, as the power of the Crown and centralized government waxed and waned and was not firmly consolidated. Yet it was now that the great corner-stones of our military structure were laid.

The Sovereign, as chief magistrate, was responsible for the safety of the Realm, for which purpose he delegated powers to the Lieutenants of Counties (the Constables of Hundreds), with the militia as executive instrument. In this, the only force provided for by the constitution under the Statute of Winchester, every able-bodied man was liable to serve, armed and accoutred according to his station in life. To ensure the efficiency of this force, Commissions of Array were appointed to carry out periodical musters and scales of arms and armour were laid down. On this stone was founded the safety of the country and the maintenance of law and order.

The Master of Ordnance at the Tower held the central

stock of arms and armour appertaining to the Crown, and the cannon and other appliances needed for the defence or reduction of fortified places. The Governors of other strongholds also had their "Officers of the Ordinance"—master-bowyers, master-fletchers, master-smiths and other mechanics; and when a fresh incumbent was appointed, an inventory or "remain" was taken of all the implements of war. The Governor then entered into indentures with the Crown and covenanted that, in consideration of the soldiers, artificers, arms and armour shown in the remain, and of his being supplied with the agreed funds, he would undertake to defend his charge against all enemies and traitors. In time of war the Master of Ordnance had not only to provide for the King's immediate followers and furnish the siege train. He had to supply all the troops with such arms as they needed; and, judging from the way in which troops were raised by indenture, and also from the analogy of later periods, he no doubt had to recover payment for what he issued from his stores in this way. He was, in fact, not only the King's storekeeper but also his military treasurer and paymaster.

On this stone was built up the machinery for supplying all those material wants of an army which had to be procured from a central source.

The third corner-stone was laid by the enactment of the Shield Tax. Whereas the Statute of Winchester provided only for home defence, under the Shield Tax troops could be levied for a foreign war on a voluntary and fiduciary basis. Out of their pay each leader had then to find his men not only with arms, but with lodging, food and raiment or anything else they might need for which, in those days, they lived on the country.

This process, however, needed money, which could only be got legally by taxation with the consent of Parliament. No permanently embodied standing army existed or was contemplated by the constitution, and the power of the Crown to engage in foreign war or enforce his will on the nation by military means was limited by his purse.

It was the Shield Tax that led to a distinction between

soldier and civilian and created a profession of arms. And it had other very far-reaching consequences, resulting in the raising of troops under indentures and the employment of mercenaries. The monetary element which it introduced was the germ of a seed of corruption that quickly took root, notwithstanding inspections by Commissioners of Array or Muster Masters. In the time to come, this seed produced a rank crop of weeds, choking every field of administration and stifling, time and again, such attempts as were made to grow a purer seed of reform.

Only after the Crimean War, when the plan of allowing the officer to contract out for the equipment and clothing of his men was finally abolished, were the tares at last ruthlessly uprooted and replaced by a clean administrative crop.

It is impossible to deal with the evolution of what are now Army Ordnance Services without some understanding of the development of the arms, equipment and clothing supplied by the Ordnance in modern days ; and that side of the picture must accordingly be next turned to.

Among all savage races the earliest use of a distinctive battle dress has been to demoralize the enemy, and Julius Cæsar writes that the ancient Britons stained their persons with woad so as to look more fierce in battle. This form of decoration may thus be regarded as the prototype of the modern British uniform.

Passing to a historical period, the Anglo-Saxons are said to have had two classes of infantry, the heavier having skin helmets with the fur worn outwards (probably for the same reason, to look ferocious), oval skin shields, and long broad-swords and spears, the lighter carrying bills, spears and battle-axes. The Roman Legions, however, wore armoured tunics, and this form of protection was copied and adopted to a certain extent by those who could afford such a luxury ; for, by the time of the Battle of Hastings, the principal soldiers or men-at-arms wore a coat of mail.

This was a loose short-sleeved garment of stout linen

or leather, about knee length. On to this coat were stitched overlapping iron plaques, the Roman scale armour, or iron rings, a type said to have been borrowed from Asia Minor. In a less elaborate form it was divided



into small squares by bands of leather fastened at the point of intersection by metal studs. A conical iron helmet was also worn by this time, and thus the next development of a distinctive dress for the soldier was for the purpose of protection. It would be only a limited few, however, who had coats of mail, the rank and file doubtless wearing the ordinary peasant's dress of the day, a loose jumper, gathered in at the waist by a belt, the legs being clad in rude cloth stockings, or trousers with feet, bound round the leg by thongs of leather or cloth.

By the beginning of the twelfth century the coat of mail had become stronger, and terminated in a hood and head-piece

of leather entirely covering the back of the neck and head. This served as a protective lining to the helmet, which was now provided with a projecting piece in front of the face, called a nasal.¹ The coat of mail was

¹ A helmet with a pivotal nasal that can be turned up out of the way still figures among the uniforms of the British Empire, being worn by the troops of some Indian Native States.

now called hauberk, and those of a less degree, though still of some standing, wore a habergeon, a similar but lighter and smaller garment, or a wambais quilted with wool or hair, but unarmoured.

It was at this period that Orders of Knighthood were established in England. Originally formed to escort pilgrims from the coast of Palestine to Jerusalem, to afford them hospitality and rescue Christian captives, these Orders, as Crusaders, soon became military in character. The Knights Hospitallers, or Knights of St. John, wore over their armour a black mantle or surcoat bearing a white cross, the Knights Templars a white surcoat with a red cross. It is believed, and indeed seems highly probable, that the surcoat was adopted as a protection from the sun in the Holy Land, which must have struck very fiercely on the armoured hauberk, and here appears another reason for the soldier adopting a type of clothing differing from that of the civilian. It would also be useful in keeping damp or rain from the armour.

The Red Cross of these Orders, originally of a charitable character, is now the universal symbol in Christian countries of organizations framed to succour the sick and wounded, and the Cross in time became a national symbol, each country adopting a different colour. These colours would have been of use in distinguishing the Crusaders of each nation when fighting against a common enemy whose symbol was the Crescent. Later on, when fighting among themselves, the coloured cross was employed to distinguish friend from foe. The English cross was originally white; but later, as the Red Cross of St. George, remained the emblem of the British soldier for many generations.

An Ordinance of War of the reign of Richard II directs that every man "shall bear a large sign of the Arms of St. George before and another behind, upon peril that if he be hurt or slain in default thereof, he who shall hurt or slay him shall suffer no penalty for it," and another in the same reign enacts "that no one be so hardy as to raise a banner or pennon of St. George, or

any other, to draw together the people out of the army."

The tendency throughout this period was to afford more and more protection, and by the thirteenth century banded mail had appeared. In this the rings overlapped



very considerably and were laid in even rows, and this form of mail was also used to cover the arms and legs. The next development was chain armour in which the rings were interwoven, doing away with the groundwork on which they had been stitched, in place of which an under-garment called a gambeson was worn. This is the same as the wambais (wambais, gambais, gambaison, gambeson). Chain armour is believed to have been brought to England by the Crusaders. The nasal, being found to furnish a handhold for the enemy, was replaced by a saucepan-shaped helmet, styled a helm, fitted with eyeslits or with a horizontal grille in front of the face. The shield of the Norman age was long and kite-shaped, and though useful for the foot soldier, must

have been very inconvenient on horseback owing to its unwieldiness. By the thirteenth century it was much smaller, shaped like a flat-iron and capable of being moved to protect the face or any part of the body. But it was inadequate to shield the legs, and it is probably due to this that plate armour was introduced first to guard the knees.

1. This form of defence was next extended in replacement of chain armour. A helmet with movable visor covered the head, laminated shoes or "solerets" the feet, iron gauntlets the hands, until eventually the knight was enclosed cap-à-pie in plate armour which extended in time to the horse as well. This process enabled the heavily quilted gambeson to be discarded as the plates did not give under a blow.

This process of evolution from the coat of mail to plate armour was of course extremely slow and gradual. Armour was seldom worn and very durable. It was moreover valuable, and handed down from one generation to another as an heirloom; and even when a new suit could be afforded, the old would be worn by a dependant. Earlier types were in use for centuries after newer had been evolved, and there was much chain armour still in use in the time of Queen Elizabeth.

The art of dyeing is very ancient, but in Europe the cult was confined to few and practised chiefly in Italy. The blue of woad, an indigenous plant, is believed to have been the only stain known to the ancient Britons, though later this was replaced by indigo imported from the East, and yellow, made from the flowers of the broom, gorse, heather and other plants, was employed. In the thirteenth century we hear of scarlet cloth being made in Lincoln, the dye for this colour being kermes and later lac (both the products of insects), which must have been imported.

These are the dyer's three primitive colours, and by using different strengths and combinations, various shades could be got. These permitted the simple surcoat to be replaced by one of bright hues and richly decorated which, as a tabard, became literally the Knight's coat-of-arms, bearing his emblems and devices. It was also the custom to emblazon these on the head-dress, and the front, back or sleeves of the tunic of his retainers who accompanied him in battle, so that a certain measure of uniformity resulted among the followers of each Noble. Without these trappings the Knight with closed visor would have been unrecognizable, and it is related that the death of

the Earl of Gloucester at Bannockburn was due to his having omitted to wear his surcoat, and thus not being recognized.

While making such an extensive use of their own insignia, however, the great Tenants-in-Chief, who should have mounted the King's badge when the Sovereign led the battle, escaped their obligation, no doubt because they were unwilling to do anything to obscure their own imposing individuality. It is interesting to note that in the last of our mediæval expeditions to France in 1475 the only soldiers garbed as "King's Men" were mainly those of the Master of Ordnance.

Moreover, although adopted primarily as ornaments, these distinctions had their uses. The Knight's emblem helped his followers to keep together in battle, while his richer dress indicated the pivot round which to rally and look for orders if separated. It is from these distinctions that our modern regimental badges and decorations of rank are derived, some of which are very ancient. The White Horse which figures in the badge of several regiments is said to have been originally black, until in 1122 its colour was changed to white on the conversion of its holder to Christianity; presumably this was before its importation into England. The galloping White Horse of Hanover, however, only became common in England in the time of the Georges.

The Crest, as its name implies, was originally an imitation of an animal's crest, but it developed into all sorts of fantastic ornaments worn over the helmet with huge plumes, real or fabulous birds and beasts, etc. It was essentially a military decoration; even now women cannot have crests, and their coat-of-arms is borne on a lozenge instead of a shield.

Mounted warfare was introduced into England by the Normans, and in the great age of feudal chivalry that followed the Conquest the mail-clad Knight was the central figure of the battle-field. He could inflict great damage with his lance, broad-sword or battle-axe, and was able to ride down with impunity the poorly armed

levies that for long constituted the only infantry. At the Battle of Crecy, however, there were present British foot soldiers of a far higher calibre. Our troops on that occasion were drawn from all classes of the populace and were thus in a sense more akin to those who took part in the Great War than at any other time before or since. Bodies of lightly equipped and skilled English archers were actually able to outmanœuvre the heavily burdened and dense masses of French horsemen, who fell prey to their powerful arrows.

Cavalry was unable to protect itself from this missile form of attack except by increasing its defences and further sacrificing its mobility, and thus dawned the age when infantry became the predominant arm. Instances are recorded of men being suffocated in their armour, and Froissart, describing the battle of Poitiers, says that "many a one was unhorsed, and you must know that when anyone fell he could not get up again unless he were quickly and well assisted."

Moreover, by the time that Knighthood was reaching such an elaborate form of outward expression in armour and decoration, its spirit was already in decay. To quote again from Froissart, "The Order of Knighthood in these days of ours is mere disorder—they bear shields bright with beaten gold, as, who should hope rather for prey than for hard fighting: and in truth these shields (if I may say so) come back intact in their virginity. Nevertheless they embroider their saddles and blazon their shields with scenes of battle and tourney, delighting in a certain imagination of those wars which in very deed they dare not mingle in or behold."

Lower down in the military hierarchy were men-at-arms, mounted and on foot, with armoured clothing of varying degree and carrying swords or other weapons used at close quarters; the lighter cavalry being called *hobilers*, probably on account of the small ponies or hobbies they rode. A light form of helmet much in vogue was the *bascinet*, which closely resembled in appearance our steel helmet of the Great War, except that it had no brim. It was so called from its likeness to a basin.

Judging from old statuary and pictures one might imagine that armour was very generally worn. But it is only the leaders one usually sees, and not the rank and file. In bygone times there was no real distinction between soldier and civilian and armies were largely composed of unarmoured peasantry wearing their ordinary work-a-day dress, a long loose blouse or "cote" (coat) pulled over the head and gathered in at the waist by a belt, with a cap of any hue but yellow, the distinguishing colour of the Jew.

The tanning or "tawing" of leather and the manufacture of rude homespun materials of canvas and wool were ancient village industries, but the better class of cloth was imported from Flanders until Henry I induced a colony of Flemish weavers to migrate to Norfolk. The industry of weaving then improved, though for long the cloth was still very rough, hair and wool being mingled together. The rude leg-wear became neater and of a better fit, and leather cross garters disappeared. Brighter colours were used and shoes of cloth, felt and leather. Another article worn throughout the mediæval period was the capuchon or hode (hood), originally nothing more than a piece of cloth sewn into the shape of a cone in which a slit was cut the size of the head. The skirts were tucked into the cote and when not required for protection from the weather it hung down behind the back. Later it became more shapely and was often a portion of the cote.

In 1336 there is a record in Devonshire of "gowns for soldiers made by the taylor," and it is probable that various bands were by then wearing coats of the same colour and with the same distinctive badge; indeed, Froissart, describing the army of the Black Prince, chiefly composed of archers and other foot soldiers, refers to it as a goodly sight, the clothing of such bright colours and so gaily decorated. He mentions that the men of various Flemish towns had different liveries to distinguish them; either coats of yellow and blue, black bands on red coats, blue coats bordered with white, blue with one quarter red and so forth. Owing to the travel

and intercourse of armies, military customs have always spread from one country to another more than other habits, and doubtless our companies soon adopted the custom of each wearing distinctive colours. London furnished five hundred archers for the campaigns of the Black Prince, and the first city of England would be sure to see that its men were well turned out.

Moreover, the first trace of a real uniform in a modern sense is found at this time, a King's livery with uniformity throughout expressly provided for. The army of the Black Prince included a corps of 1000 Welsh spearmen and the King directed his Chamberlains in North and South Wales to provide these men at his expense with coats and mantles (capuchons?) which were expressly to be all of the same colour and material. This was in 1337, but unfortunately the design of this earliest Royal uniform is unknown.

The chief arms of the peasant were the bill, bow and spear, the bill being nothing but a blade set on the end of a shaft. The principal weapon, however, for which England was long famous, was the bow. While introduced by the Normans as a regular military weapon, it was presumably already in use, being one of the most ancient weapons that man has devised. A company of archers was employed in 1125 and did much execution, and a select body went on a Crusade in 1189. Green was the archer's favourite colour, Robin Hood's men wearing Lincoln green.

Chaucer, in the prologue to his *Canterbury Tales*, thus describes the archer :—

“ And he was cladde in cote and hode of green
A shefe of peacock arwes bright and kene
Under his belt he bore ful thriftily
Well could he dress his tackle yewmanly
His arwes drouped not with fethers lowe
And in his hond he bare a mighty bowe
A not-hed¹ hadde he, with brown visage
Of wood crafte could be well all the usage

¹ Head like a nut, i.e. with the hair cut short.

Upon his arme he had a gai bracer
And by his side a swerd and a bokeler
And on the other side a gai daggere
Harnnised wel, and sharp as point of spere
A cristofre¹ on his brest of silver shene
An horn he bare, the baudrik was of grene
A forester was he sothely as I gesse."

This description conveys the impression that the archer wore a smart yet workmanlike dress. The gay bracer was a strap bound round the left arm to prevent the sleeve from getting frayed or entangled in the bow-string.

The bow with which victory was mainly won at Crecy, and to a great extent at Poitiers, was a formidable weapon, with which it was said a marksman could make good practice at 400 yards. The arrows were a yard long, a few were passed through the belt for immediate use and the quiver, hung from the belt or slung over the shoulder, held a further quantity. Besides his bracer, the archer had a shooting glove to protect his hand, and it was not uncommon to plaster the arrow-head with quicklime, or if there were wooden buildings about it was sometimes covered with some combustible material which would be set alight before firing. An important article always carried was a stake, which he planted in front of him as an entanglement in case of a charge of horsemen.

Besides the long-bow there was the cross-bow, the string of which was drawn back through the agency of a small windlass. Though it might be used to slay Infidels, the cross-bow was condemned by a Lateran Council in 1139 as "hateful to God and man" when used by Christians fighting with each other; and this, forsooth, because its steel bolt would penetrate a coat-of-mail. This bolt was styled a quarrel; hence the significance of the phrase to fasten a quarrel on a person, a process bound to be resented.

The ban, however, was no more effective than the solemn pledge taken by all the Powers after the Great War to abjure poison gas seems likely to prove in the present

¹ Badge of St. Christopher.

year of grace, and for the same reason. Those in a position to command a supply of what was then a rather intricate piece of mechanism, difficult to manufacture, refused to forego their advantage when it came to the point ; and, in the hands of experts, the cross-bow in time largely replaced the long-bow, being a more deadly weapon though one that took longer to prepare for action.

By the time of Agincourt, in 1415, the Royal Archer wore the Red Cross and his pay had risen to 6d. a day. This very high rate, according to the standard of the mediæval age, shows in what high estimation he must have been held as a soldier. In this century, too, there was a change in the style of dress. The cote became shorter and tighter, often fastened down the front with loops or buttons, and in its



new form was known as a jack or aketon (jacketon), the diminutive being the child's jacket. As a military garment the jack developed out of the wambais, being often sleeveless and composed of several folds of linen quilted and stuffed with wool or hair, commonly covered with buck or doeskin, and sometimes worn either over or under light armour. This change of fashion seems

to have been introduced from abroad, for a French writer refers with admiration to the British archer at Agincourt with his jack long and easy, his limbs at liberty for shooting, and his chausses neatly bound at the knee, while another describing the dress of the British soldier says :—

“ C’etoit un pourpoint de chamois
Farci de boure sus et sous¹
Un grand vilain jaque d’Anglois
Qui lui pendoit jusqu’ aux genous.”

With bands of mercenaries roaming Europe in search of pay and plunder, it would be natural that more attention should be paid to defence than offence. There was more distinction between civilian and soldier, and armoured and padded clothing with iron head-pieces were commonly worn by the latter, the archer carrying two stakes in place of one.

Agincourt was followed by the Wars of the Roses, a series of faction fights in which the country at large took little part. The Red Cross disappears and the liveries and badges of nobles, such as the Bear and Ragged Staff, take its place. It was these rather than the Red and White Rose, the emblems of the two opposing parties, that were prominent. This was a period of extravagant dress, all sorts of fantastic liveries being worn. An example of an extreme form of motley is shown in the illustration in which one leg is purple and the other blue, both having a white cork-screw line down them. One half of the jack is red, and the other green, the colours being reversed in cuffs and shoes.

In this century the tabard disappeared, and in its place armour was engraved and damascened with the finest work in the precious metals.

Scarves of different colours were sometimes worn in the Wars of the Roses, one of the principal battles of which exemplifies the use of uniform to distinguish friend from foe. At the battle of Barnet in 1471, fought

¹ Stuffed with wool inside and out.

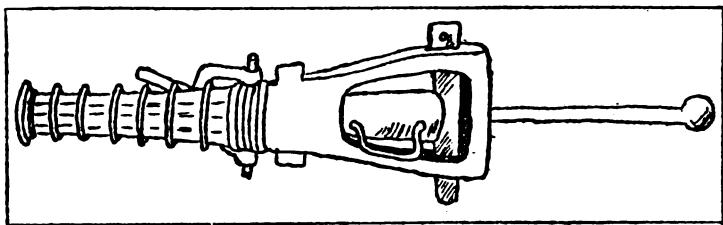
in a dense fog, some of the Lancastrians after driving off the Yorkists lost their way, and found themselves in the rear of their own force. Their badge, the Radiant Star, being mistaken for Edward IV's badge, the Sun with Rays, they were greeted with a shower of arrows which created a panic and outcry of treason, resulting in their defeat.

Those weapons which, more than any other, have absorbed the activities of the Ordnance down to the present day remain to be mentioned.

The earliest occasion on which there is record of cannon in the annals of our wars is at Crecy where Villani, the Florentine historian, says we used bombards which "with fire, throw little balls to frighten and destroy horses"; and though Froissart fails to mention the fact, this is no proof that Villani is wrong. It was not, however, till centuries later that they were used to any great extent in the field. The cannon really replaced the battering ram and catapult as a siege weapon. It was employed, for instance, on quite a substantial scale in the siege of Calais in 1347. These bombards, rudimentary forerunners of the modern gun, were at first built up of lengths of wrought iron, bound round with hoops;



though later, when the art of casting such masses of metal was learnt, of brass or cast iron. Originally the charge was in a separate chamber held in place by a wedge or baulk of wood, but casting enabled them to have a solid breech pierced by a vent. Although the piece shown in the illustration is provided with trunnions, it was usually strapped to a platform which might be provided with wheels and which was raised or lowered according to whether it was intended to batter a breach or lob a projectile over a parapet. Sometimes winged shafts like that of the cross-bow were discharged, or a collection of large pebbles enclosed in a skeleton wooden frame-



work against troops in the open, but more commonly spherical stone balls; and the gun was often bell-mouthed to facilitate loading. It was fired by the application of a red-hot spike to the vent, a brazier forming part of the equipment.¹

The small-arm, said to have been first used in the Wars of the Roses, was merely a light gun called an arquebus—derived either from the German *hackenbüchse* or the French *arc-a-bouche*, literally a bow with a hole in it.² This was mounted on a stick in place of a carriage, the stick being held under the arm or over the shoulder. The muzzle was supported by a prop, either stuck in the ground or attached to the front bow of the saddle.

¹ An interesting and copiously illustrated account of this early artillery is given in Volume I of the *Journal of the Society of Army Historical Research*, 1921-22.

² The cross-bow sometimes had a barrel through which its quarrel was discharged.

CHAPTER II

THE TUDOR AND FIRST STUART PERIOD

THE Knight at his initiation kept vigil in his armour with his sword on the Altar ; and these, emblems of the purity of the cause to which he devoted his life, he was enjoined to keep bright and spotless. Although these symbols of Knighthood outlived its spirit, the British soldier must in this way have learnt to turn himself out smartly and to keep his arms and accoutrements bright and shining ; while a new spirit, that of the Renaissance, would have intensified pride in appearance at the time when Henry VII won the throne and consolidated the power of the Crown. A great growth of international commerce and intercourse was in progress ; and a great revival of art, including new styles of dress based on

“ Report of fashions in proud Italy
Whose manners still our tardy apish nation
Limps after in base imitation.”

Florence was specially noted for its cloth, and Venice for its silk ; and it was the cities of northern Italy that were then the arbiters of fashion, witness the word milliner, derived from Milan.

So far as armour permitted, it was by now the custom for the soldier to wear some sort of uniform coat, each band clad more or less distinctively ; and, as the coat was a Royal livery, and the leaders were drawn from the upper classes, it was natural that the military dress should be modelled on that of the court. From this time onwards till the French revolution, costume was designed more for the sake of ornament than comfort, and conferred distinction on its wearer who took much pride in his wardrobe. Pepys and Evelyn were men of affairs, and the latter at any rate no fop, yet the diaries of both abound with references to, and minute descriptions of, their apparel. It was held also that a smart and conspicuous dress had an ennobling influence and would help the soldier, usually drawn from the dregs of the populace, to

show esprit de corps and face the enemy as he should. Thus he was expected to wear his smartest parade uniform on the field of battle. Moreover, a bright uniform was attractive to the young soldier and assisted recruiting. Later on the recruiting sergeant, to add to the attraction, decorated his hat with fancy ribbons and was accompanied by a drummer in a particularly resplendent dress, for it was the regular practice to raise recruits by beat of drum.

And so it happened that the soldier retained his bright uniform right through the last century although, in that utilitarian age, men took to wearing a more sober garb in other walks of life. Even when, in the present century, the service dress of to-day was introduced, a loose-fitting jacket and trousers of drab colour, there were some who thought the measure a mistake, and that the soldier would not fight at his best without his traditional red coat. But conditions had changed, the class from which he was drawn was higher, and the few who still represented this school of thought were proved to be in error. In fact, when armour fell into disuse, it may be said that the soldier's special clothing was designed to safeguard his honour, whereas previously its intent had been to preserve his body.

But to return to our period. Henry VII raised a bodyguard, and while it was nothing new for the King to have a personal following, this force differed from its predecessors, in that it has had a permanent existence ever since, becoming the Yeomen of the Guard and having much the same uniform to this day. This body he clad in red, and it has been conjectured that herein lies the origin of the scarlet tunic of the British army. One of the standards at the Battle of Bosworth, which set the Earl of Richmond on the throne as Henry VII, and which he offered at the Altar of Saint Paul's, consisted of a Red Fiery Dragon on a field of white and green, the ensign of Cadwallader, a maternal ancestor from whom he was fond of tracing descent, and the suggestion is that that red was adopted from the colour of this dragon. The red of this bodyguard, however, was at first russet, a

dull reddish brown, and not scarlet. A description in the reign of Henry VIII describes them as apparelled "in russet damask and yellow, all the nether parts of every man's hosen skarlit, and yellow cappes." It was only later that a brighter colour was adopted, at first probably solely for coats used on occasions of state.¹ Another conjecture, made by Julius Ferretus, an old Italian



writer who assumed that red was the usual hue for soldiers' coats, is that it was adopted because, being the colour of blood, a wound would be less repugnant to behold.

Both suppositions seem rather far-fetched. Indeed, red was seldom worn at this time, and the probability is that it was an expensive colour until cochineal, an American product, came into general use in England about the middle of the sixteenth century. Red coats only became popular for soldiers in the time of Elizabeth

¹ *History of the King's Bodyguard of the Yeomen of the Guard.*

and universal for infantry in that of the Commonwealth, and it seems to have been as much a matter of chance as anything else that led to Cromwell's army wearing that hue. One reason, though, why it was then adopted may well have been because it was such a bright colour for a uniform, one in which the soldier might be expected to take a pride and which, owing to its being so conspicuous, he would hesitate to disgrace.

The uniform of the new bodyguard shows the great change of fashion that occurred. The coat is full in the body and skirt, and the sleeves puffed ; the mounted man wears long boots, and just as the padded coat was called a jack, so the jack-boot protected the leg.

Though this illustrates the style of the period, however, the ordinary soldier doubtless had to be content with a much plainer coat, the sole obligation being to carry the Cross of Saint George, in addition to which was the captain's badge. An act of the reign of Henry VIII directs that "every man going in hosting or battle, of whatever estate, condition or nation, be he of the King's party and host, except he be a Bishop or Officer of Arms, bear a Cross of Saint George sufficient and large . . . and that no soldier bear no cognizance but the King's and his Captain's under pain of death." The intention presumably was to insist on the national character of the army by making the national cognizance obligatory in place of the various devices worn in the recent internal strife.

The Tudor colours were green and white, incidentally that of the groundwork of the banner bearing the Fiery Dragon. Henry VIII's Royal Archers at one time wore green with a breast-plate bearing the Red Cross, at another white gabardines and caps ; while at a review in 1539 the London Trained Bands were all in white, even to their shoes. Though there were coats of many colours, white predominated, and the soldier was often called a "White Coat." The fantastic liveries of the previous century, however, were still to be seen. In the reign of Henry VIII a body raised by the Duke of Norfolk had the right leg in red hose and the left in blue, with a red stripe three fingers broad down the leg, a curious forerunner of the

modern striped trouser ; and in the reign of Queen Mary, white and green were going out of favour ; red, white and blue, the colours of the combined Arms of England, Scotland and France, becoming fashionable.

The Ordnance Office, of which little is to be gathered during the distractions of the Wars of the Roses, was revived in the reign of Henry VII and became one of much importance. In those days of Hawkins, Drake and raids on the Spanish Main, it began to have many dealings with the navy through that ancient guild of mariners the Brethren of Trinity House, who were responsible for outfitting and arming all ships of war.

The business of the Ordnance was regulated by the Privy Council which dealt with its doings often in great detail. The register of its Acts, practically continuous from 1540 onwards, contains many references to the subject ; and it is curious to find that there is hardly a transaction now familiar to the Ordnance Officer that had not its counterpart at least as early as the time of Henry VIII. The post of Master of Ordnance at the Tower was held by men of great distinction, such as the Earls of Warwick and Essex, but the organization was still loosely knit, for there were independent Masters elsewhere, the work as a whole being co-ordinated by the Privy Council. The extracts from its Acts which follow cover the reigns of Henry VIII to Elizabeth ; the spelling, which is delightfully varied, being modernized. Ordnance appears under many guises, such as Ordonnance, Ordinance, Thordynance and Thaurdinance.

The most important part of the business lay in the issue of Warrants for sums to cover the provenance of munitions, for which the Office seems to have lived very much from hand to mouth. Here is an example of such an authority which shows the origin of the modern term *imprest* :—

1546. March 12. Warrant to Mr. Peckham to deliver in prest to Frances Fleming, Lieutenant of the Ordnance for the emption of certain things wanting in the Tower,

to make up the proportion sent to Newhaven and for freight.

The following is a typical Warrant authorizing the issue of stores :—

1547. Oct. 2. Sir Philip Hobby, Master of the King's Majesty's Ordnance, has warrant to deliver to Edward Vaughan, Captain of Portsmouth, iii. demiculvers and iii. sacres of iron, and to deliver to Nicholas Holbon and William Ballard Vc spears, M bows of yew, V barrels of bow strings containing I gross, M sheaves of livery arrows, one last of serpentine powder, one last of corn powder, sacreshot of iron CCC,¹ sacre-wheels shod with iron III pair, handguns complete C, to be by them conveyed from the Tower of London to West Chester, and from thence to Ireland : more in this warrant, tilts of hair to cover the powder III.

From a large order for stores for Boulogne the following items are selected, as showing that even in these early days the vocabulary of stores would cover a fair-sized list :—Blackbills, morris-pikes, leather for repairing corselets, gyves, packsaddles, leather hides, nails for harness, buckles for harness, felling axes, hand baskets, cressets of iron, crows of iron, nails of all sorts, great spikings, smith's forges complete, rammers, rammer-heads, tampions, touch-boxes, flasks, brimstone in rock, brimstone in meal, rosin, pitch, salt-petre, linseed, oakum in tow, verdigris, black soap, emery, marlin-twine, pack-thread, "tronkes" for fire-workers, wire for faggots, paper, tallow candles, elm timber, great beams and weights, sieves for powder, balances to weigh powder.

From the following it will be seen that a Bishop was confined on Ordnance premises :—

1553. Mar 7. A letter to the Lieutenant of the Tower to remove Doctor Tunstall, late Bishop of Durham, from his lodging in the Ordnance House to some other meet

¹ Sacre and serpentine—small cannon. Corn powder a grained powder, whereas serpentine powder was fine.

place there, for that the said Ordnance House must presently be occupied otherwise by the Officers of the same.

Then we come across an order for a foreigner to be shown round the Tower :—

1578. Dec 31. A Letter to the Lieutenant of the Tower and the Officers of the Ordnance and Armour to show Monsieur Kentill, gentleman of High Almagne, the Tower of London and such things as are usually showed therein.

The evergreen subject of accommodation crops up in a letter to Calais.

1553. April 14. A letter to the Surveyor of Calais to make up the storehouse within the office of the Ordnance there that the same may be used, for want thereof his Majesty is now put to charges to provide and hire other houses in the town.

In 1558 storehouse accommodation seems to have been scarce at Tynemouth, and a letter was despatched to the Bishop of Durham "for the removing of the ordnance, presently remaining in the church of Tynemouth Castle, into some other fitter place, to the end the inhabitants may have the use of the church for the hearing of Divine Service."

It will be noticed that Roman numerals were still employed, though Arabic were coming into use as well, and to cast up figures must have been a very difficult matter, in fact it is to be doubted if anything in the way of a stock account was kept. But there were occasional stocktakings. In 1553 a letter directed Mr. Broke, Master of the Queen's Ordnance, to make a "perfect book of the remain" of all ordnance and munitions in his hands, that her Highness may be more assuredly answered thereof. The word "remain," which has continued a stock term in Ordnance accounting to this day, will be noticed. To make up for the lack of accounts and ensure that stocks were maintained in serviceable order, surveys were ordered from time to time, conducted either by a

Surveyor who worked under the Master of Ordnance, or by some independent persons.

Shakespeare refers to a survey at the Tower by the Duke of Gloucester, Lord Protector during the minority of Henry VI, who has little faith in the custodian.

Gloucester. I come to survey the Tower this day ;
Since Henry's death, I fear there is conveyance.

But he is refused admittance by the Lieutenant under the orders of Beaufort, Bishop of Winchester, head of the rival faction. A brawl ensues between Gloucester's blue coats and Winchester's tawny coats, to appease which the Mayor of London is called in.

The next extract deals with a condemnation following a survey by the Master and his assistants. The use of the word "imbecilled" in this connection is quaint; "decayed" was the term employed fifty years later.

1549. Oct. 22. Warrant to Sir Francis Fleming and Anthony Anthony to deliver to Richard Ward the parcel following, viz. bows 133, sheaves of arrows, 66 . . . flasks, touch boxes, leather bags, all of which the said Ward delivered out of the King's Storehouse at Windsor by the Duke of Somerset's commandment; which, being examined before the Lord Great Master and the said Officers of the Ordnance, are deponed to be imbecilled, wasted and broken.

Here are instructions as to the disposal of gunpowder.

1551. Feb. 5. A letter to Mr. Dansell, at his discretion either to convey over the King's Majesty's powder from Antwerp if he see any likelihood so to do, or else to sell it, signifying the price thereof to the Councillor or ever he conclude; but, if he can convey it hither the King shall abide the venture.

The term indent, an abbreviation of indenture, is also to be met with as an agreement under which the recipient of munitions guaranteed to be responsible for

their safe custody and good condition or to pay for deficiency or damage.

The Privy Council also went into details of establishments and wages or even travelling allowances :—

July 15th, 1846, Mr Williams has warrant for £43.6.7 to Sir Francis Fleming for his diets at 6s. 8d. by the day for CXXX days riding in post with two servants and one guide from London to Cornwall two several times about the fortifications at Sylla (Scilly) and Plymouth.

Except for the confinement of a Bishop, not one of the incidents quoted above but will be recognized by the Ordnance Officer of to-day ; and the same holds good as to his duties in the field, which are described in 1518 as follows :—

First, it is the Office of the Master of the Ordnance after that he hath received his charge at the Council's hands, he must first of all, in any wise before he shall go forth to the camp, see that they lack no kind of munition or such other necessities which appertain to the said Master of the Ordnance.

And there are appertaining to the Master of the Ordnance, a Lieutenant and certain Clerks, which are all in wages.

Also the said Master of the Ordnance must also first of all receive the ordnance, shot, corn-powder, serpentine-powder, match and all other munitions, as fireworks, bows, arrows, strings, pikes, bills, halberds, harquebuses, calivres, lances, light horseman's staves, javelins, and bore-spears.

And further the said Master of the Ordnance must receive all kinds of necessities, that is to say, ladders, ladles, and sponges for artillery, mattocks, spades, shovels, pickaxes, crowes of iron, cart-wheels for ordnance, cart-traces, with all kinds of cart wares, as ropes, cresses and cressets, lights, lanterns, candles and links, with all other necessities, which must be foreseen, that there be no lack before their going on.

Further that is the office of the Master of the Ordnance,

after he comes into camp, and the Provost Marshal hath appointed the ground most meet and necessary for the artillery, then must the aforesaid Master of the Ordnance cause the said ordnance to be brought to the said place appointed, there to be placed to the most advantage.

Item, The said Master of the Ordnance must cause the said munitions to be brought to the place appointed and meet therefor, which must be trenched about, for the danger of fire ; and the aforesaid Master of the Ordnance must charge some discreet man with watch if it stand in need.

Also the said Master of the Ordnance must see that there be attending on the Office of Ordnance certain artificers, as carpenters, wheel-wrights, smiths, bowyers, fletchers, masons and such other necessary men, meet and convenient therefor.

The said Master of the Ordnance his office is that if there be any captain that lacketh munition for his soldier, the said captain shall come to the Master of the Ordnance and he must command the Clerk of the Ordnance to deliver such munition as he lacketh ; providing always that the Clerk of the Ordnance do take a bill of the captain's hand, or of his lieutenant's hand, for the said munitions, and at the pay day the Clerk shall deliver the said bill unto the Treasurer, that he may stay so much money in his hands as shall answer the Queen for the munition so delivered.

Furthermore it is the office of the Master of the Ordnance that if the enemy and foe join battle, the ground being appointed by the officer of the field, where the battle shall be pitched, to repair to the field, there to see the ordnance, and in any wise to be circumspect that the Master Gunners do their duties belonging thereto.

It will be seen here that provision is definitely made for issues on repayment, even on active service ; a corollary of the plan of making the troops self-supporting, even for munitions expended in time of war.

It is well known that corruption and peculation were very rife at this time, and it was not uncommon for

complaints to be made of the quality of what the Ordnance furnished. On one occasion a quantity of bows supplied from the Tower was found to be useless, on another the troops refused to wear the inferior head-pieces provided. The Armada in particular gave opportunity for frauds and impositions, officers and others taking advantage of the time to appropriate the property of the state and enrich themselves at its expense. A Commission of Investigation was appointed, and in the year 1598 the Office of the Ordnance was re-constituted on lines that were but little changed until the Crimean War. At the head was the Great Master who supervised the whole by land and sea. As assistants he had a Lieutenant who acted as treasurer, being allowed to keep 6d. in every sovereign disbursed to cover expenses and salaries, a Surveyor who was responsible for the quality and quantity of what was bought, a Storekeeper who had custody of the stock, a Clerk of the Deliveries who made issues, and a Clerk of the Ordnance responsible for finance.

In the following year there was a great stocktaking when "the remains of all Her Majesty's Ordnance, powder, shot, and other munitions within the Tower of London, the Minories, and Woolwich Artillery Garden, and other places" was directed to be made by Her Majesty's Auditors of the Prestes and other Commissioners, under Royal Warrant.¹ The Commissioners, after taking stock at the Tower and Minories, and other places adjoining, are instructed to "safely lock and make fast under your seals all and every the locks and doors wherein you shall from time to time find any provisions"; and the Lieutenant of the Tower was to keep the keys till the remains at Woolwich Rochester and on Her Majesty's ships had been taken; when they were to be handed back to the Storekeeper. These elaborate precautions speak for themselves.

It will be seen that the custody of the Master of Ordnance now extended to Woolwich, the Mother Dock

¹ A detailed record of this remain exists in Meyrick's book on "Ancient Armour."

of England, whose history starts with the building in 1512 of the *Henri Grace à Dieu*, and also to Rochester. Elsewhere munitions remained in charge of the Governors of fortresses with their subordinate Masters, or in the care of Lord Lieutenants of counties.

During this time the bow and bill were becoming obsolete, archers and billmen being converted into pikemen and musketeers. Pikes and halberds were new weapons borrowed from the Swiss, then the finest infantry in Europe, who had proved how well a resolute phalanx of foot soldiers could keep a body of heavy cavalry at bay with a bristling forest of such formidable weapons. The pike was simply a spear some eighteen feet in length, to enable the dismounted man to thrust at a horseman from a safe distance. The halberd was less commonly used and only by select bodies. It combined a spear head for searching out the joints of armour, with a cutting blade on one side and on the other a hook for pulling a horseman out of his saddle. For long afterwards the halberd was carried by the sergeant as the officer carries his sword, mainly as an emblem of office. Its principal use was then for flogging, for which purpose the soldier was tied up to a triangle of halberds.

Nevertheless the bow died a very lingering death and we were the last nation to discard it in favour of the musket, for Henry VIII encouraged archery which was going out of fashion elsewhere.¹ England had long been famed for its prowess with the bow, a sporting weapon that perhaps appealed to the national character. A Venetian in 1557, reporting on English military affairs, writes: "and such is their opinion of archery and their esteem for it, that they doubtless prefer it to all sorts of arms, and to harquebuses, in which they trust less, feeling more sure of their own bows and arrows; contrary however, to the judgment of the Captains and soldiers of other nations." He says we wear "canvas doublets quilted with many layers, each of which is two inches or more in thickness," which are a sure defence against

¹ Bows and arrows were actually used at the battle of Leipzig in 1813.

the shocks of arrows ; and less armour than foreign nations where the firearm is more employed.

The musket was in fact still a very cumbersome weapon, and two hundred years elapsed after its invention before it became the universal infantry weapon. By now the stick on which it was mounted had become a stock resting against the shoulder, so that the musket could be sighted by line of metal. A pan was formed round the vent alongside of which was a serpent-shaped arm or cock worked by a lever. After loading, the pan was primed with powder and a piece of slow match—twisted tow or rope dipped in vinegar or winelees—was fastened to jaws at the end of the cock. The lever was then pulled, when the glowing match descended into the priming pan, discharging the piece. The generic name for this musket was a match-lock.



The muzzle was supported by a prop ; and the musketeer had to carry a pouch of leaden bullets, a touchbox of fine powder for the priming, a flask of coarse powder for the charge and in his hand a piece of slow match, lit at both ends—for the act of firing extinguished the end employed, which had to be re-lit from the other. Powder was originally carried loose in the pocket ; a dangerous proceeding, and one that rendered it useless in wet weather. The next stage was the introduction of cases made of wood, or at first of copper, tin, paper or leather. Each case held one charge of powder, and twelve,

slung on a leather strap passing over the shoulder, were called a bandolier. When empty, the cases were re-filled from a "budge-barrel," a powder cask carried with the troops. This step was rendered possible by the extended use of matchlocks which, when of a standard calibre, were styled calivres. It increased the rate of fire and enabled the powder flask to be dispensed with.

But the musketeer was encumbered with his heavy weapon with its adjuncts and accoutrements. At first he could only fire some ten or twelve shots an hour. In the interim he was without means of defence, and had to be accompanied by pikemen, there being two to four pikes to every musket. The pike was the more honourable weapon; a gentleman would "trail the puissant pike"¹ but would not shoulder a musket. The pike required strength to manipulate, and the pikeman was the more heavily armoured. The smaller and weaker were selected as musketeers; a shower of rain was enough to extinguish the match, and altogether the firearm was not held to be of much account.

Poor though it was, however, the musket was responsible for a much more general use of armour which, in the sixteenth century, reached its zenith of perfection both in strength and craftsmanship. The mounted man, armed with a heavy lance couched across his saddle bow, trusted solely to the shock effect of himself and his horse. Otherwise he was very defenceless, to compensate for which he made his armour ever stouter. So far as it was possible to allow him comparative freedom of action, the horse was protected as perfectly as the man with an iron integument, proof even against the arquebus bullet—a chanfron for the head, a crinet for the neck, a chest-piece, flank pieces depending from the saddle and a crupper encircling the hind quarters—altogether a formidable weight.

Moreover, now that he was exposed to musket fire, the foot soldier wore iron to protect the most vital parts of his body, besides padded clothing. A complete footman's corselet consisted of a head-piece, gorget for

¹ Shakespeare—*Henry V.*

the throat, back- and breast-plates and tassets to protect the thighs, these being narrow strips hooked together and suspended from the breast-plate. But often the breast and back alone were worn with skull caps of iron or leather ribbed with iron. Another form of armour was called *almaine* (German) rivets, in which plates appear to



have been riveted together to allow of more freedom. There were also brigandines composed of a double thickness of linen between which small plates of iron were quilted, the brigandine being called after the Brigand, a kind of light-armed irregular foot addicted to plunder. In addition there was much old plate and chain armour of various sorts still in use.

A writer says there was "great deformitie in the apparrell and armours worn uncomlie, uneasilie," and

another, describing the soldier's clothing, says it was "so hard quilted, stuffed, bombasted and sewed, as they can neither work or yet play in them, through the heat and the stiffness thereof." Indeed, the freedom of movement that characterized the English archer of the fourteenth century was lost; armour, leather, padding and stuffing combined with tight-fitting garments made movement very constrained. A saying attributed to James I, as renowned for his witty words as for his foolish deeds, is that armour was an excellent invention, for it not only saved the life of the wearer, but prevented his harming anyone else.

In the reign of Queen Mary a Statute of Armour was enacted, with elaborate scales of arms and armour to be maintained by those of various degree and income. Mary's hold on the country, however, was so precarious that it may be doubted whether this Statute was enforced to any great extent, and it was repealed in the reign of James I. However, it led to a motion of protest in the House of Commons that subjects were compelled under severe penalties to maintain sundry sorts of weapons and armour which were altogether unnecessary, besides having to find more modern articles for any occasion of war. A Committee of Enquiry was appointed, with what result is unknown, but undoubtedly a lesser degree of armour was worn by the end of the reign of Queen Bess, and older types were discarded.

The musket and pike, in fact, were extending the revolution in tactics set on foot at Crecy and Poitiers, where archers and other foot soldiers took such toll of heavy mail-clad horsemen. Not only was shock action by cavalry useless against a square of pikemen, but as the musket gradually improved in value, armour was obliged to give up its contest with the projectile. During the Elizabethan era, horse armour was first discarded and next the complete encasement of the rider, who gained in mobility what he lost in protection.

This process was accompanied by a complete change in the rôle of cavalry who followed the lead of infantry and

adopted fire tactics. Armed with a short and light musket, originally the petronel and presently the pistol, first of one barrel and then of two—a weapon that could be fired with one hand—the horseman had a chance of shooting down the foot soldier without venturing within reach of the pike.

Nevertheless the Elizabethan era was one of transition, when there were still heavily equipped lances and demi-lances protected by three-quarter or half suits of armour. But a novel type of mounted man appeared whose ancestor may be said to have been the hobiler archer, as he was merely a musketeer mounted on any sort of nag to give him a greater range of action. These true mounted infantry were styled dragoons from their light muskets, christened after that fiery monster the dragon. They were first employed at the Battle of Pinkie in 1547, when a body of foot soldiers was placed on horseback to obtain greater mobility.

By the close of the sixteenth century the musket could fire thirty or forty rounds an hour, and the number of pikemen and musketeers was about equal. Nevertheless the musketeer, with all his accoutrements, was very defenceless after discharging his piece even although armed with a sword; and for this reason a ten-deep formation was used, each rank in turn filing to the rear after firing so as to endeavour to keep up a continuous rate of fire. Cavalry, when using firearms, adopted a similar formation, and worked in small bodies in place of the dense masses of the past.

By now types of guns were more standardized, ranging from the Robinet of 200 lbs. with a bore of one inch, to the cannon proper of some 7000 lbs. firing a sixty-pound shot. Iron shot were used in place of stone, or, with the smaller natures, bombs—spheres filled with powder or incendiary materials. The gun was no longer fired by a spike heated in a brazier, but, like the musket, by means of match. The gunner carried a linstock, a shaft with an iron tip and two arms or cocks to which the pieces of slow match were affixed; and these were applied to a train of powder poured down the vent.

To understand how the soldier was provided with clothing and equipment it is necessary to cover rather a wide ground ; for many factors, especially that of pay, are involved. On the accession of Henry VII, various companies of mercenaries and retainers, employed by leading nobles during the Wars of the Roses, were in existence ; and although troops were still raised for the purpose of war by means of indentures, and mercenaries employed, the tendency was to absorb these in the county organization revived under the Statute of Winchester ; such bodies as were organized and equipped being known as Trained Bands.

The Lord Lieutenants were responsible for maintaining this county militia as a whole, the captain for his company in particular ; and each county received a grant out of the Royal Exchequer for the purpose. One portion of this grant was called " coat money," and definitely earmarked to provide clothing ; the reason probably being that there should be no excuse for wearing any livery except that of the King. At first this was handed over to the man ; but it was the regular custom for the captain to provide clothing, and he continued to do so (which would incidentally tend to promote uniformity), the coat money being stopped out of the man's pay ; so that in time the custom of issuing it to the soldier fell into abeyance. The only result of this innovation was to lead to stoppages of pay, or " off-reckonings " as they were called ; a term that came to bear a very sinister meaning when all sorts of stoppages were made ; so that it became impossible for the soldier to know what was due to him. Indeed, stoppages, legal and illegal, already existed ; for when teams were hired for transporting artillery, it was directed that their paymaster should take no bribe from the drivers, and only retain one penny per month from each man.

Throughout the Tudor period there were frequent enactments dealing with irregularities at musters ; and various Commissions of Array were appointed to enquire into the state of the forces. Statutes were framed to prevent the theft or embezzlement of arms and armour ;

and making it illegal to sell or pawn them. Others again subject captains, who defraud men of their pay, to forfeiture of goods and imprisonment. Scales of arms and equipment to be maintained were laid down ; and scales of fines if they were not forthcoming. Some of the scales were sumptuary ; thus any man below a certain standing whose wife wore a gown of silk, a French hood, a bonnet of velvet, or a chain of gold, was required to keep a horse, with harness and appropriate weapons.

Despite these various laws, however, malpractices flourished, and the dishonesty of officers became notorious. Henry VIII formed a special bodyguard of youths of noble birth, the "Spears of Honour," now Gentlemen-at-Arms, so gorgeously arrayed that even their horses had trappings of gold cloth, and the oath which these scions of the nobility had to take includes the following : "I shall not lay to pledge nor put away such horse and harness as I now have mustered with before the King to any person or persons, nor put out of service any Archer, Coustrell¹ or Page that I now have with me. . . . Nor shall I know of any of my company in likewise to lay to pledge or put away any horse, harness or Archers, but that I shall show the same to the King's Grace his said captain or deputy Lieutenant in as brief a time as I conveniently may. . . . And also all such horse, harness and other habiliments of war as I now have mustered with before the King's Grace, the said captain or deputy Lieutenant with any Archer, Coustrell or Page, but only with such as I have retained with me to serve the King's Highness for the same intent." To show that this was no idle profession, there was a penalty of the loss of six days' pay for every day in which there was default, in addition to which the body of the Spear of Honour might be "ponysshed att the kinges pleasure." The provisions against dishonesty in this oath are, indeed, far more full and explicit than those against disloyalty. The Ordinances of War of Henry VIII direct that each captain shall make oath at muster that all his men, their clothing and equipment, are his own ; and the soldier at the first

¹ Armour-bearer.

muster that his harness and bows and arrows are his, his master's or captain's.

A most vicious circle had in truth been created. The captain had paid for his command in the expectation of gain; and recouped himself by maintaining as small a body as possible, making shift to pass his muster parades by borrowing men and equipment, or bribing the Commissioners who came from the Office of Ordnance. These officials were themselves corrupt; being mainly interested in collecting the fees they were allowed to exact from each body they mustered. Such men as he kept he clothed and equipped as ill as possible, charging them far more for their clothing than its cost; and, no doubt, also making a profit out of the supply of necessaries. He also made money out of contracts for the soldiers' subsistence, especially on service. The usual practice during war had been to arrange for supplies of food to be delivered in camp, and for the soldier to buy what he wanted; but now it became the custom to provide rations, or "provand," in place of pay. These were so poor that the soldiers, herded together under improvised shelter with no knowledge of sanitation, contracted plague and pestilence; and died or were invalided in large numbers. The business became such a scandal that the supply of provand was prohibited; but so many illegalities flourished that it would be unsafe to infer that it therefore ceased.

Under such conditions trouble was bound to occur; the soldier would pawn or sell his kit to get food and drink; and riot, or even mutiny, would ensue. To check this and maintain discipline, the most savage punishment was given; which in turn led to desertion, whereby the captain profited by pocketing the deserter's pay. Desertion has always had its attendant evil, fraudulent enlistment. The ex-soldier would return after a bout of idleness to the only trade he knew, and a fresh name would appear on the books, with an extra issue of pay.

It would be a mistake, however, to suppose that officers were a set of bloodsucking usurers, battenning on the miseries of their men. Falstaff made little out of soldiering

and the price of a commission in Ireland fell to £50 in Elizabeth's reign. The system of contracting out for everything connected with interior economy was undoubtedly bad, and almost bound to result in corruption; but its evils, during this period, were largely exaggerated by economic causes. In the mediæval age the cost of living remained fairly constant; the soldier's wage, always founded on that of the agricultural labourer, was more than sufficient for his needs. In fact, it may be said that he was comfortably off according to the standard of life of the period.

With the discovery of America, however, and the growth of international trade, far more gold and silver came into circulation with the result that the purchasing power of money declined. In addition to this, in the middle of the century, the coinage was deliberately debased on four successive occasions. This was done to pay for the wars of Henry VIII; and was equivalent to flooding the country with paper money, the evil results of which have been sufficiently evident since the Great War. The currency was reformed in the reign of Elizabeth; but the effects of its debasement lasted until the Commonwealth. There were violent fluctuations in prices. The cost of board and lodging, estimated at 1s. a week in 1542, jumped up to 3s. in 1552; and the quantity of bread, cheese and meat purchasable for 1s. towards the beginning of the century could not be procured for less than 2s. 5d., 2s. 6d. and 3s. respectively at its close.

While prices rose in this way, wages, including those of the soldier, did not increase in anything like the same proportion. The well-being of the lower classes declined, and in years of bad harvest the starvation point was almost reached. The soldier's pay, which it must be remembered had to provide for his every need, only rose from 6d. to 8d. a day; and if, as was usually the case, it was in arrears, the officer still had to provide somehow for his men. The only prospect really open to either was in time of war, when more attention was paid to loot than to defeating the enemy. When towns were

taken, they were regularly given over to pillage for a period of days, regardless of the fact that pursuit might lead to further victory. The navy was criticized on the same score of devoting more attention to capturing valuable prizes than to beating the enemy's ships of war.

If things were bad in the time of Henry VIII, who entered into his inheritance with a full purse and was interested in his army, they grew far worse under Elizabeth, who hated to be troubled with her soldiers' grievances, when the Royal Exchequer was exhausted by the wars of Henry VIII, and when the ill-effects of debasing the currency were making themselves felt. Elizabeth was by nature parsimonious; and was at perpetual loggerheads with her Parliament, by means of which alone fresh taxation could be imposed and further revenue raised. Pay was not forthcoming; and the difference between the numbers shown on muster rolls and that of properly equipped soldiers almost passes belief.

There was fighting in Scotland; and while pay was drawn, or more probably owed, for 8000 men, the number present was but 5000. The French Ambassador informs his Master that he estimates 120,000 men could take the field, when the muster rolls show 600,000. Elizabeth's instructions to her Commissioners of Array are more in the nature of appeals than orders, and contain no mention of pay. The Commissioners are directed particularly to consider all imperfections in armour, weapons, horse furniture and such like; to make instruction to remedy the same in a limited time; and to appoint persons to give order for reformation against the time of the next muster. Everyone is to be encouraged to do his best; and the lesser men are to be entreated, for the love of their country, to join together and provide between them at any rate one set of soldier's furniture, a pikeman's, archer's or harquebusier's. They are to make arrangements for the proper maintenance of the county's armour and weapons; and to make lists of all properly equipped soldiers by categories of arms. They are not, however, to expect that every man shall be equipped, but

only what they think a sufficient number to charge on the county ; and substitutes are on no account to be allowed.

She writes to the Lord Lieutenant of Devon, Cornwall and the City of Exeter, and "requireth more earnestly her said cousin immediately with all speed to renew such good orders as by him were last year taken upon musters" — "upon experience had she perceived that for the just and necessary defence of the realms the late laws have wanted sufficient provision, or else the interpretation thereof is so by sundry persons construed to their private ease and relief of charge, which in many is more regarded than the ease of the Commonwealth"; therefore "she requireth her said cousin to prescribe all who had been undervalued to be better and more amply furnished with horse, gelding, corselet, bows, bill, handgun, etc."

In fact the muster rolls were nothing more than lists of able-bodied men, with the scantiest details of their equipment. For example, that for Devonshire reads as follows: Able men, 10,000; furnished, 6200; trained, 1650; lances, they find none, but instead 200 muskets; light horse, 150; petronelles, 50. Others are much the same; and the custom of allowing pay and coat money to be drawn for a certain number of imaginary men seems to have been at this period officially recognized. In 1557 the pay-roll of a force of 1000 cavalry and 4000 foot includes 50 "mort-payés" for the former and 400 for the latter; and another of about the same date shows six per captain.

In consequence of the difficulty of raising men for service in Ireland, the pressgang was set to work for the first time and led to such trouble that steps had to be taken to allay the unrest. A letter from Sir John Harington in Ireland, dated 1599, is extant which purports to show the scale of clothing and its cost; and this paints a very rosy picture.¹ "But I must not forget," says he,

¹ Here is the other side of the picture. In a treatise on the Defence of the Realm addressed to the Queen, Sir Henry Knivett writes, in the year 1596, that soldiers of late have been "so lightlie regarded; yea so uncharitable and cruellie used; as were it not for their extraordinarie obedience and loyall love which they bear to yor most sacred Matie: they would more willinglie be hanged at their dores."

“nor cease to tell Her Majestie’s good, wise and gracious providings for us her Captains and our soldiers . . . for our backs and bellies. That is to say, every Captain of a hundred footmen doth receive weekly, upon every Saturday, his full entertainment of twenty-eight shillings, in like case every Lieutenant fourteen shillings and every Ensign seven shillings, our serjeant, Surgeon, drum and fife, five shillings pay by way of imprest, and every common soldier three shillings to be delivered to all by the pole weekly. To the last four lower Officers two shillings weekly, and for every soldier twenty pence weekly, is to be answered to the full value thereof in good apparel of different kinds, part for winter, and part for summer, which is ordered to be of good quality and stuff for the prices, patterns whereof must be sent to the Lord Deputy to be compared and prepared as followeth :—

APPAREL FOR A COMMON SOLDIER IN WINTER

	£	s.	d.
A cassock of Kentish broad cloth, lined with cotton and trimmed with buttons and loops	17	6	
A doublet of canvas with white lining	12	6	
A hat cap cover	7	0	
2 shirts of Osnabridge Holland and bands	8	0	
3 pairs of neat’s leather shoes, 2s. 4d. each	7	0	
3 pairs of Kersey stockings	8	0	
1 pair of Venetians of Kentish broad cloth with buttons, loops and lining of linen	13	4	
	<u>3</u>	<u>13</u>	<u>4</u>

IN SUMMER

2 shirts of Osnabridge and 2 falling Hollands bands	7	0	
2 pairs of neat’s leather shoes	4	8	
1 pair of stockings	2	8	
1 hat cap coloured	3	0	
	<u>17</u>	<u>4</u>	
	<u>3</u>	<u>13</u>	<u>4</u>
	<u>4</u>	<u>10</u>	<u>8”</u>

The soldier’s gross pay is here shown to be 8d. a day, rather above that of the agricultural labourer ; but the

deduction on account of clothing, 36 per cent of the total, is extremely high. There is no reason to suppose that clothing was cheaper in the time of Cromwell than in that of Elizabeth, yet the Commonwealth paid only 23s. for a soldier's cassock, doublet and breeches of good material, whereas the price here given is £2 3s. 4d. Moreover in the Commonwealth, when the soldier was well cared for, the yearly scale was two shirts and two pairs of shoes and stockings a year ; while he is here shown as receiving four shirts and four pairs of stockings, with a new pair of shoes every ten weeks. If it is a fact, as Sir John Harington asserts, that the articles were "of good quality and stuff for the prices," it is difficult to conceive that the soldier required or received such an ample allowance. But this was during Essex's abortive campaign against Tyrone. Elizabeth was furious against Essex, desertion had been very rife, and doubtless Harington, a poet and courtier, concocted his pretty tale to assuage the wrath of his august mistress.

The letter mentions the stockings allowed for winter wear as being made of kersey, a rough-faced woollen material ; Venetians were breeches ; and the cassock a soldier's coat, worn over a thin doublet. Shakespeare, who describes so aptly the soldiery of the period, mentions the cassock : " the muster file, rotten and sound, amount not to 15,000 poll, half of which dare not shake the snow from off their cassocks lest they shake themselves to pieces." In the cavalry the cassock was replaced by a cloak ; 1000 men, raised in the time of Elizabeth for service in the Low Countries, were provided with red cloaks down to the knee, lined and without sleeves.

An interesting point is that the idea may have occurred at this time that a dull-coloured uniform might be useful in war time for the purpose of concealment, thus anticipating the similar use made of our modern khaki and service dress. A letter which refers to the raising of 100 men for service in Ireland, says they are to have " convenient doublets and hose, and also a cassock of some motley or other sad green colour, or russet ; also every

soldier to have 5/- to provide a mantle besides his livery coat when he shall have arrived."

If, however, the county organization was failing owing to the reasons given above, the danger to the country was averted by the more loyal spirit of its citizens, London leading the way; and Trained Bands, supported by voluntary contributions, were organized and equipped by various Corporations and Guilds. Although the raising of such forces was unconstitutional, it was certainly better than the old practice of hiring mercenaries against which, it must be said to her credit, Elizabeth steadfastly set her face. It was equally to her discredit that she instituted the pressgang with all its attendant evils; which allowed the sweepings of the jail, rogues and vagabonds of all sorts, to be enlisted as soldiers.

At this time trade guilds were powerful; there were companies of cloth-makers, tailors, pike- and gun-makers and armourers; and it is to be supposed that these saw to it that the lads of London were smartly clothed and efficiently equipped. At a parade of the London troops at Greenwich Park, in 1599, it is recorded that the pikemen were in bright armour, harquebusiers in coats of mail with helmets, harbordiers in almaine rivets, led by Wardens of the City Companies, mounted and dressed in white velvet, the Ensigns in white satin faced with black sarsenet and rich scarves. Other accounts during the reign of Elizabeth describe pikemen in coats of blue, with corselet; archers in blue cassocks with white facings; jerkins of buff or deer skin, and iron skull caps lined with red cloth; cassocks of blue cloth, with two small gardses of white; red coats tied under the arms with white tape; pale blue coats, and breeches with two stripes of red or yellow down the seam two fingers broad; white stockings and shoes with large ties; and white cloth coats with yellow or red as a border. A common form of head-dress was the Monmouth cap, a cheap knitted article.

The Red Cross of St. George was by now disappearing, and the white and green coats out of fashion, but not entirely so. A letter dated 1557, which relates to the furnishing of a body of men for service in the Highlands,

says, "their coats must be after the old manner, white coats and red crosses, for so my Lords think most fit." Red and blue, however, were the prevailing colours; 4000 men raised by the pressgang were given red coats, though yellow, green, orange, white and other hues were worn. Organization by regiments was beginning to take place, and they were often designated by the colour of their coat. Regimental colours date from this period, though company standards were still borne.

In the reign of Elizabeth fashions entirely changed; the loose, wide-skirted coat of the time of Henry VIII was replaced by a short tight doublet, while short trunks with very long stockings and large ruffs, a Spanish fashion, came into favour.

James I reigned during a period of peace, and the Trained Bands, except perhaps those of London, became hopelessly inefficient; their training, a mere farce, consisting of nothing more than a perfunctory inspection once a month. At this time there

were really no regular troops except a few small garrisons, and the forces employed in the small expeditions of Charles I were specially raised. In fact in James' reign the militia was relieved of the obligation to equip itself with arms and armour which were withdrawn and stored, with stocks of ammunition, in castles or county magazines formed for the purpose, whence they were only removed when required for use.

There was little chance for fashion in the reign of King James, though very wide bombasted breeches were



worn. This style was introduced by James himself for his personal protection. Throughout he lived in dread of assassination, the obsession deriving, it is supposed, from the tragic incidents that attended his birth. But in the time of Charles, dress became extremely picturesque. The doublet was replaced by a less tight-fitting coat and large hats with feathers were worn. Lace collars and cuffs replaced the ruffs, breeches were less full and often ended in a frill. These changes would be reflected in the soldier's dress, plain linen no doubt taking the place of lace.

One innovation deserves brief mention as it created a bad precedent and indirectly affected the sum available to clothe and equip the soldier. During the war with Scotland, Charles appointed a Treasurer to pay the army, and, in addition to a salary, allowed him to remunerate himself by deducting one penny out of every hundred passing through his hands, the amount being later increased to £12 10s. in every £1000. The result was that the soldier had to pay for the privilege of having a paymaster.

England having lagged behind other nations in the adoption of the firearm still imported most of its gunpowder, and attention was given to this subject. A proclamation of 1632 prohibits unnecessary waste and forbids salutes or other needless expenditure. Another, of 1636, was evidently intended to regulate and stimulate home manufacture, for it prohibits importation and manufacture by any but the King's "Makers of Gunpowder," and fixes the price at one shilling and sixpence the pound, if bought direct at the Royal magazines. Another proclamation, in 1632, prohibits the making up of "girdles, belts, hangers and other wares for men's wearing and warre-service with brasse-buckles" and directs that the buckles are to be of iron as brass was too brittle.

A more important matter is that the reign of Charles I witnessed the first attempt to standardize the soldier's equipment and make it conform to a definite pattern. In 1627 "The Kings Most Excellent Majesty taking into

his princely consideration the frequent abuses complained of by Officers of His Majestie's Armourie and Stores, as well in purloynning as in chopping and changing of Arms" directed that all muskets and other arms issued should be marked C.R. (Carolus Rex), with the addition of an anchor if for sea service. Likewise in consequence of the no less frequent abuse caused by counties borrowing each other's arms for the purpose of musters and training, it was ordered that the arms of each band should bear distinctive marks.

Two years later a survey was made of the arms, armour and ammunition in the various castles and magazines of the kingdom. This was followed in 1631 by the appointment of a standing commission under the Master of Ordnance, composed of experienced mechanics of the companies of armourers, gun, pike- and bandolier-makers of London, who were instructed to see that the arms and armour were put into a fit state. The survey had shown that much was decayed and neglected so that in time of war it was necessary to seek supplies in foreign parts at uncertain or exorbitant prices and at the pleasure of foreign Princes; and the various companies undertook to supply in case of need, with seven days' notice, 1500 muskets and sets of armour with a suitable proportion of bandoliers and pikes per month, at prices fixed by schedule.

The commission was to work under the Lord Lieutenants of counties. It was to ascertain what was unserviceable and to repair what needed mending, to ensure that the number of the various articles accorded



with the number to be held under the muster rolls, the Lord Lieutenant having to make good any deficiency, and finally it was to stamp everything that was correct with the letter A and a crown, the hall-mark of the Company of Armourers of London, in addition to which the county and district stamps were to be affixed, to avoid the possibility of transfer and deceit.

Fixed scales of prices for the various articles and their components, and rates for carrying out repairs, were laid down, the detail for a complete musket with its adjuncts and accoutrements being as follows :—

	s.	d.
Musket, with mould, worm and scourer ¹	15	6
Musket rest		10
Bandolier with 12 charges, a primer, a bullet bag and a strap or belt of 2 inches in breadth	2	6
	<u>18</u>	<u>10</u>

For a complete set of footman's armour the rates were :—

	£	s.	d.
Breast		5	6
Back		4	6
Tassets		5	0
Combed head-piece lined		4	6
Gorget lined		2	6
	<u>1</u>	<u>2</u>	<u>0</u>

It was further directed that whereas certain “cutters, smiths, tynkers and other botchers of arms” have carried out repairs unsatisfactorily in the past ; in future no one is to be allowed to do such work until he has served an apprenticeship of seven years at the trade and understands the mysteries of making arms, pikes, guns or bandoliers ; and that no arms or armour are in future to be sold that have not been proved, and marked with the stamp of the Company of Armourers.

¹ The mould was for casting bullets, the worm to enable the wad to be withdrawn when it was desired to unload, and the scourer a ramrod, also used to clean the weapon and remove the fouling.

Finally, owing to the inconvenience caused by a diversity of patterns and their frequent alteration, different counties and parts of the kingdom having different fashions, it is decreed that any new armour, head-pieces, guns, pikes or bandoliers wanted for the Trained Bands shall conform to certain specific patterns lately approved and lodged at the Ordnance Office.

CHAPTER III

THE COMMONWEALTH¹

IF we credit the historical novels of Sir Walter Scott, Harrison Ainsworth and others, there was a striking contrast between the opposing forces in the Civil War. The Cavalier is represented as gay and debonair, in feathered hat, laced coat, piratical-looking boots, and with long locks; whilst the Roundhead, with stern face or sour visage, as suits the argument of the story, wears a sober doublet with linen bands, his cropped hair being covered by a plain high-crowned hat. The language of the former is interlarded with oaths, and the speech of the latter biblical in the extreme. It is also commonly assumed that the people took an intense interest in the struggle; and threw in their lot with one side or the other, either from a passionate loyalty to the Sovereign, a strong sense of religion or a political conviction that the power of the King must be abated, and constitutional government by Parliament prevail.

Neither supposition can be accepted save with considerable reserve. Despite the interest of the nation in this struggle for civil and religious liberty, it has been reckoned that the total under arms was never more than two and a half per cent of the population, whereas in the South African War the Boers had twenty-five per cent in the field. Of the educated classes many stood aloof. They would have preferred that there should be a compromise, and that neither King nor Parliament should entirely gain the upper hand. Even among the leaders some were not very whole-hearted. "If the King be beaten," said Manchester, "he will still be King, if he beat us he will hang us for traitors." The soldiers were in the main pressed men, or fought for a livelihood; the side they took depending on the political and religious views of a few prominent men, and whether the district in which they lived was controlled by King or Parliament. Hobbes

¹ I feel that no apology is needed for the use made in this chapter of facts and quotations from Sir Charles Firth's book on Cromwell's army. No one writing on the subject could fail to profit from the work of such a great authority on this period of history.

writes that "if the King had had money he could have had soldiers enough in England, for there were very few of the common people that cared much for either of the causes, but would have taken any side for pay and plunder."

Again, though the gay Cavalier with his unselfish loyalty and careless valour, and the Roundhead with his stern self-discipline, are characteristic types of the two parties, yet on either side there were coats of every hue and armour of every degree. Hair soon grew, and contemporary portraits show that, from Cromwell downwards, the parliamentary leaders wore their locks just as long as the Cavaliers. In fact so little difference was there between the troops of the opposing sides that, as in the Wars of the Roses, there was difficulty in telling friend from foe; and this led to the adoption of various distinguishing badges.

At Edgehill the parliamentary troops wore orange scarves, those of the King red; and some seventeen or eighteen out of a body that deserted to the side of the Royalists were killed as enemies, because they neglected to remove their sashes. In this battle the King's standard was captured, and given for safe custody to Essex's secretary; whence it was presently recovered by an officer and two men who, "disguising themselves with orange-coloured scarves, and pretending it unfit that a penman should have the honour to carry the standard, took it from him and rode with it to the King." On one occasion a colonel was taken prisoner owing to his mistaking Hampden's green coats for those of Lord Northampton. At Marston Moor the Roundheads wore white in their hats (as one side does with us now at manœuvres), either a handkerchief, scarf or piece of paper; and Fairfax, having occasion to seek Cromwell, removed his handkerchief and passed unrecognized through the Royalists. At the Battle of Newbury, and again later at the Boyne, the parliamentary troops had green boughs in their hats¹;

¹ This custom survived in Ireland and France till nearly the end of the century according to Clifford Walton's *History of the British Standing Army*, 1660-1700. It tends to show that there was little to distinguish French and English troops.

and at the latter their opponents had white bands on the arm. But the strangest method of distinction, sometimes employed in sieges, was to wear the shirt-tails outside the breeches, either behind or before and behind. Some of these instances refer to occasions subsequent to the universal adoption of the red coat in the parliamentary army ; and they indicate clearly that there can have been little difference in the general appearance of the men who fought on either side.

A struggle at once began for possession of the arms and powder stored in county magazines in the reign of James I ; and for control of the ports on the East and South Coast, where reinforcements of men and replenishments of munitions could be landed from France for the Royalist cause. Hull was of special importance ; not only as a port, but because it contained arms and ammunition accumulated for a campaign projected against Scotland. Parliament succeeded in getting possession of Hull and Portsmouth, and of the Tower, the most important asset of all.¹

There being few regular troops, both sides had to raise and equip levies, and this required money. Each had financial difficulties, but the Royalists were at first the better off. An ingrained sense of loyalty and belief in the divine right of Kings caused some to place their money and possessions at Charles' disposal ; while Parliament was an abstraction which could command no particular sense of loyalty. Parliament was loath to raise funds by taxation, never a popular measure ; but soon had to do so, with the result that its

¹ From the Journal of the House of Commons, August 20th, 1642. "It is this day ordered by the Lords and Commons, in Parliament assembled, that the several Officers of the Ordnance and of the Armoury in the Tower of London, respectively, shall forthwith upon sight of this Order, deliver the Keys of the Office of the Ordnance, Arms, Ammunition and Stores there, and of the Office of the Armoury, to such as the Committee for the Defence of the Kingdom shall appoint to receive them ; or else, that the Doors of the said Office shall be forthwith broken up : And the charges and keeping of the said Arms shall be committed into the hands of such as the said Committee shall think fit."

financial position became stronger than that of the King.

Each side resorted to impressment and tried to cloak its efforts to raise troops in a mantle of legality. Parliament called to its aid the Statute of Winchester; the King made use of his Commissions of Array. Generally speaking it was the east and south that were for Parliament, and the west and north for Charles. On either side, however, the forces were of poor quality. The King's method was to grant a commission to any who would undertake to bear the expense of raising a body of men, and these he distributed so lavishly that his army was largely composed of officers. Parliament, on the other hand, gave "mounting" or "levy" money to those who provided regiments, the estimated cost of fitting out a trooper being £15. But its forces were equally unstable owing to desertion. The fact is that no one realized how long would be the struggle. Each side set to work to improvise troops but made no arrangements for a regular issue of pay or clothing. Armies melted away as fast as they were raised.¹

There was difficulty, too, in getting men to fight outside their own county. The Statute of Winchester, the sole constitutional instrument under which troops could be raised, enacted that every man must fight to defend his country. But, it might well be asked, of what, in time of civil war, did that country consist? The militia, which this Statute provided for, was on a county basis, and whilst many were ready to defend their county, they were unwilling to march elsewhere. To meet this difficulty Parliament formed the counties it controlled into groups or associations; the strongest being the eastern association

¹ "All my best men," writes Massy, Governor of Gloucester, "run away for lack of clothing and other requisites, and take service in other parts and Associations where they may have shelter and surer entertainment."

Essex writes, "My desire is that if there be no pay like to come to me by the latter end of the week I may know of it, I not being able to stay among them to hear the crying necessity of the hungry soldiers"; and the officers of his army represent that the number of Foot are 3000 marching men and at least 3000 sick occasioned by the want of pay and clothing.

which embraced Essex, Suffolk, Norfolk, Cambridge and Hertford, to which were later added Lincoln and Huntingdon. On the side of Parliament another weak point was the lack of unity of command. Members of Parliament who had no knowledge of military affairs raised and commanded regiments. There was friction and bickering among them, and they failed to combine. Each had his own particular interests to safeguard, his own particular part of the country that appeared to him of paramount importance, and there was little concerted effort. Regiments, too, on both sides were of all sorts and sizes and organized and armed anyhow. The "White-coats" raised by Newcastle were 4000 strong, while many were not one-tenth of this number.

After two years of civil war under these conditions, it might almost be said that the position was one of stalemate. Battles were won and lost, but neither side could definitely obtain mastery. Cromwell was among the first to grasp that something better in the way of an army was necessary to achieve victory. So efficient was the regiment of cavalry that he raised that it earned the name of Ironsides; not, be it noted, on account of the light armour worn, but owing to the way it took punishment and refused to acknowledge defeat. The term was first used by Rupert to describe Cromwell himself. Cromwell was a leading man in the eastern association, and urged his view in Parliament. "Without a more speedy, vigorous and effective prosecution of the war," said he to the Commons, "casting off all lingering proceedings, like those of Soldiers of Fortune beyond sea to spin out a war, we shall make the Kingdom weary of us, and hate the name of a Parliament." It was chiefly due to his efforts that, in January 1645, both Houses were persuaded to pass a bill creating an army on an entirely new model—which in fact was called the New Model Army.

The New Model Army was to have a regular organization; so many cavalry regiments, so many infantry, and one of the dragoons, besides a few artillery and engineers. Each regiment was to be of definite strength, subdivided similarly, and armed in the same manner. There were

to be regular scales of pay and clothing, the cost being defrayed by taxation, for which purpose each county was assessed ; and there was to be a standard uniform. Red had come to be the colour mainly worn in the eastern association to which Cromwell belonged, and red was the colour adopted for the New Model Army. By an irony of fate it was trained in the Royal Park of Windsor, and the scene must have much resembled that at our training camps when Kitchener's armies were being raised. There would be individual, squad and company drill in progress ; with arms, equipment and uniform becoming each day more plentiful, until finally all were in the red coat, which remained the emblem of the British army until the Great War. In place of a mass of amorphous elements, ready to disintegrate under the slightest strain, the new force was welded together by ties of assimilation, pay and discipline ; a single weapon forged ready for the use of its commander. Other forces of Parliament were soon incorporated in the New Model, which defeated the Royalists and became the army of the Commonwealth.

The most noticeable feature that distinguished Cromwell's troops from those of former days was the very scant use made of armour. It is curious that while it was the musket that led to this being so generally carried, it was the improved musket that resulted in its being discarded. With so many and more efficient firearms in use, armour, if it was to be of real service, had to be so heavy as to make movement almost impossible ; and it was replaced by mobility as a method of defence. Instead of attempting to stop a bullet, the soldier tried to keep out of its way. But there was another reason that hastened this change in England. The soldier of fortune of Tudor days, and he who fought in the first stages of the civil war, was mainly concerned in saving his skin, and getting sufficient to eat. Loot was his principal aim, and the defeat of the enemy a minor consideration. Cromwell's object, in which he was so eminently successful, was to create a body of men who had " the fear of God before them, and who made some conscience of what they

did." The paramount aim of the new army was to gain a decisive mastery over the Royalists ; and armour was a hindrance, not an aid, in attaining this object, for mobility was essential if victory in battle was to be followed by pursuit, and its full fruits reaped. By the end of the Civil War armour was never worn by the infantry. The musketeer discarded it first ; and the pikeman, complaining that he was "imprisoned in his armour, whereas the musketeer marched open to the air, which was no small benefit to him," followed suit. "The defensive arm of a musketeer," said Monck, "is a good courage."



The next matter to be recorded is the improvement in, and far more general use of, the musket. The pike was still employed to repel a charge of cavalry ; but, before the end of the Commonwealth, there were two musketeers to every pikeman. The musket had become shorter and lighter, and the support for the barrel was no longer needed. Musketeers had been employed in a ten-deep formation ; each front rank in turn, after firing, filing to the rear to reload. The depth was by now reduced to six and then to five, or even three when volley

firing, from which it is evident that the rate of fire had much increased. But otherwise the musket was still the weapon of early Tudor days, though with the charge made up in bandoliers instead of being poured down the barrel from a powder flask. During the Commonwealth, however, a radical change in the method of firing was introduced, which immensely increased its efficiency. This consisted in the ignition of the priming by means of a spark, produced by friction, instead of by a burning match.

Match had many disadvantages. For one thing it

was about as dangerous as a naked light in a powder magazine.

“ Like powder in a skillless soldier’s flask
Is set a-fire by thine own ignorance.”

Romeo and Juliet.

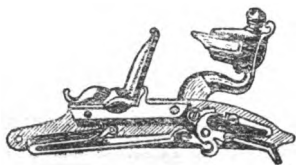
Sparks not infrequently set fire to the charges in the man’s bandolier and burnt him ; they might accidentally fire his musket with damage to a comrade ; and there was danger of setting alight the budge-barrel when the bandolier was being refilled. It was very unreliable, would missfire as often as four times in ten in windy weather owing to the sparks blowing away, and in the rain was useless. In night operations its light revealed the position of the troops to the enemy.¹ It was a main obstacle to rapid fire. Every time the musket was to be discharged the match had to be fixed in the cock before the trigger was pulled, and afterwards it had to be removed and carried in the left hand during all the complicated operations of loading. A further disadvantage was the enormous consumption. It was necessary always to carry lighted match in the neighbourhood of the enemy, for if troops were surprised with their match unlit they were helpless ; and besides the portion ready for use the musketeer carried a spare coil in his belt, or stowed away in his pockets and the crown of his hat if it was wet.

The firelock had begun to replace the matchlock during this time, its first form being the wheel-lock, in which a wheel with a serrated edge was wound up against the force of a coiled spring. When the trigger was pulled the spring was released, and the serrations came in contact with a piece of iron pyrites, producing sparks in the priming pan. The action in fact was somewhat like that of the modern petrol cigar lighter ; but the contrivance was cumbersome, expensive and apt to get out of order ; and if the spring was kept in tension for long it was liable to jam and refuse to work. The flint-lock which appeared

¹ This led to its being sometimes lit as a ruse, where a feint was intended, while the real attack developed elsewhere. Also on occasions it was left to burn on the ground, or in hedges and shrubs, to cover a retreat.

about the same time was far cheaper and simpler, and soon ousted the wheel-lock. In this the spark was produced by the contact of flint and steel. Originally the priming pan had been separate from the cock and its mechanism, but now the two were incorporated into one unit fastened to the right-hand side of the stock. The priming pan had a cover to keep the contents from spilling or getting wet, and a furrowed steel plate was attached vertically to this cover which was actuated by a spring to keep it either in the open or closed position. The arm which held the match was provided instead with a flint permanently fixed in its jaws, and when the trigger was pulled the flint struck the steel plate, forcing the cover open and showering sparks into the priming.

This firelock was first employed for cavalry carbines and pistols owing to the difficulty of using match on horseback, and for muskets supplied to special companies of infantry who were told off to guard artillery and ammunition and were also given tawny coats as a distinguishing uniform.



Of the gun there is nothing new to record but that the charge was now sometimes made up into a cartridge instead of being ladled into the bore. Guns were mainly naval weapons. A few light pieces might accompany and support infantry, but in the land service they were chiefly employed in sieges and proved very effective in reducing the last Royalist strongholds.

In Cromwell's army there was one cavalryman to every two infantry, and the various types of mounted men were more closely assimilated. The last battle in which fully armoured cavalry appeared was Roundway Down in 1643, and they were nicknamed by the Royalists, their opponents, the regiment of lobsters on account of their hard bright shells. But the weight was too ponderous for either man or horse and full suits of armour disappear from that date. The lance was discarded with the heavy armour, and cavalry weapons became a light musket or

pair of pistols with a sword. As a rule the sole armour was the back- and breast-plate with a light head-piece or pot ; and sometimes even these were dispensed with. The cavalryman wore a buff leather coat and gauntlets as protection from a sword-thrust ; leather breeches, long boots, a broad-brimmed felt hat in the absence of a pot, and he had a cloak.

Buff is derived from buffalo ; but came to mean any stout leather, treated by a special process that rendered it tougher than ordinary tanning and gave it its distinctive colour. The cavalryman was of a much superior class to the foot soldier. He received a high rate of pay in return for which he found his own horse and saddlery, probably his own clothing and sometimes even his own arms ; so that there would not be such uniformity as among the infantry. There are, however, records of saddles being bought by the Government for service in Ireland at from 16s. to 16s. 6d., boots at 14s. 10d. the



pair and a lighter saddle for dragoons at 7s. With their increased mobility, Cromwell's cavalry were not content with fire action. Formed in line, they would charge home with the sword, knee to knee, after discharging their pistols. Nevertheless they were still often employed as mounted infantry in the same way as the dragoon, who was simply an infantryman mounted on any sort of nag for the sake of mobility, who had no armour, not even a pot, and probably wore the red coat of the infantry, with half-boots in place of shoes.

It is significant of the care taken of the soldier's welfare under Cromwell's direction that several new articles of equipment, now regarded as essential, first appeared at

this time. One was the knapsack or snapsack as it was called, then merely a sack of canvas or leather, costing but ninepence, and slung from the musket or over the shoulder. In this the soldier carried his spare kit and rations.

Tentage in the form of highly decorated marquees for the delectation of kings and nobles had for long been in use, but to provide tents for the common soldier was another novelty. They were first employed by Cromwell to keep the troops in health during his campaigns in Ireland and later in Flanders. "We keep the field much," he writes from Ireland, "our tents sheltering us from the wet and cold and yet the country sickness overtakes many." They were probably small ridge-pole tents, each providing shelter for a file of six men and, though poor, were far better than nothing.

It was during the Commonwealth that we had our first taste of campaigning in the tropics, with a far-distant overseas base, in an expedition to the West Indies. The force was ill provided for, ill equipped and suffered great hardships; casualties from disease being far heavier than those due to the enemy. A principal difficulty was to provide the troops with water, the lack of which caused the defeat of the expedition in 1655. When, after a long march, the soldiers reached their objective they were so exhausted as to be unable to fight. An account of this action states that the Spaniards "found little opposition of the weak and feeble multitude, parched by the heat of the sun and half-dead with thirst, no care being taken to supply this defect." General Venables, who was in command, writes that "whoever comes to these parts must bring water bottles," and in another letter he urges for blackjacks, without which "not one man can march in these torrid regions where water is precious and scant." Also the tents that had been promised never materialized, and Venables, on another occasion, gives this as the reason for not attacking. "Our tents not coming," he writes, "nor our stores, we doubted the rains (which would kill us all) would overtake us before we could gain any place of shelter or make one."

A lesson learnt from this campaign was the importance of

water bottles on service and, like tents and knapsacks, they were hereafter provided in time of war as camp equipage.

One further innovation may be mentioned, seeing that in modern times the issuing of war medals has been an Ordnance service. After the victory of Dunbar, the issue of a medal to every officer and man on service in Scotland on September 10th, 1650, was sanctioned by Parliament. This is the first occasion on which the private soldier was awarded a decoration, but no evidence is forthcoming that it was ever supplied except to officers, so it is possible the rank and file received a gratuity instead. The medal bears the bust of Cromwell on the obverse and the reverse represents the Commons assembled in Parliament.

It is unfortunate that no account has come down to us of the actual system by which the soldier was clothed, but it was the usual custom for supplies to be provided by contracts entered into by Parliament, the Council of State, or Committee of the Army. The journals of Parliament contain many records bearing on the subject. The following condensed extract from the proceedings of the House of Lords dated September 10th, 1642, typical of many, is selected as showing the full scale and cost: The Commissioners for the affairs of Ireland having thought fit that 7500 suits of clothing should be provided for the regiments of Horse and Foot in Ulster, viz. 1 cap, 1 doublet, 1 cassock, 1 pr. breeches, 2 pr. stockings, 2 pr. shoes, 2 shirts; their Lordships approve of these being purchased from certain merchants in London who are guaranteed payment of £15,937 10s. or 42s. 6d. the suit, which sum is to be deducted from the soldier's pay at the rate of 2d. a day. Also for the furnishing of such clothes for the captains and other inferior officers as shall amount to one month's pay for the captain and two for the inferior officers, to be taken out of the first issue of pay due by an order of the House dated July 21st.

Details of prices mentioned at other times are as follows: Monmouth caps 1s. 11d., doublets 6s., coats (or cassocks) of Suffolk, Coventry or Gloucester cloth and breeches of Reading or other cloth, both shrunk in cold

water 17s., stockings of good Welsh cotton 1s. to 1s. 1½d. a pair, shoes 2s. 3d. to 2s. 6d. a pair, shirts of fine Oxenbrig (Osnaburgh) white and well conditioned, or of Lockram 2s. 9d. to 3s. Apparently one set of clothing was issued each year, usually about the month of October ; and from these details the price per set works out at about £1 12s., considerably less than 42s. 6d. paid in 1642.

By the end of the Commonwealth the Monmouth cap had been replaced by a broad-brimmed felt hat, sometimes plumed, in imitation of the beaver or velvet hat of the officer. Coats are described as of "Venice colour red," breeches of "grey or other good colour," and the facings were in the colour of the colonel, the senior regiments of horse and foot having their coats faced with blue, the colour of Fairfax the first Commander of the New Model Army. As befitted Puritan England the clothing was plain and unadorned, except for the facing, in the form of a preservative binding round the edge of the coat.

One agreement states that the coats are to be made "three quarters and a nail long (twenty-seven inches and a quarter), faced with bayes or cotton with tape strings according to a pattern delivered to the Committee" and the breeches in length three-quarters one-eighth (thirty-one inches and a half), well lined and trimmed suitably to the pattern presented. These lengths are the same as those of the modern full-dress tunic and knickerbockers for a man of average height. While kersey had a rougher finish than cloth, bayes (baize) was of a still looser texture, lighter than the modern article, and was commonly used for linings.

In 1645 a committee of London merchants, interested financially in the reduction of Ireland, complained about the clothing provided by a contractor, who had supplied inferior goods "which were found to be very coarse shrinking cloth, and most of the suits too little and unserviceable." It was said that cassocks and breeches for which he had charged seventeen shillings could be bought for ten. To prevent such impositions a system of inspection was instituted and a contract for clothing made

this same year contains the following clause : " That although it is impossible for any person to undertake to make the said provision exactly suitable for goodness to any pattern, for that many may be a little better, and some a little worse, yet it is the resolution of the said contractor and he does hereby promise, that as near as he can none of the said provisions of coats, breechings and stockings shall be worse than the patterns presented to the said honourable committee, and that the said committee, or such as they shall appoint to view and supervise the said provisions, shall have power to refuse any of them, against which there is exceptions." Records show that these inspections were made, and certificates furnished, by experts in the particular line of manufacture ; for example, boots were examined by the Master and Wardens of the Cordwainers' Company. Even so there were complaints as to quality and the price which the man had to pay ; for it appears that he was charged 4s. for a pair of boots, considerably more than their cost.

The infantryman's pay fluctuated between 8d. and 10d. a day, and in some lean years, when prices ruled high owing to bad harvest, the soldier received an extra allowance for food and lodging when not at free quarters and rations ; in addition to which " storm money " was sometimes granted for the capture of towns to mitigate the evils of pillage. As usual, his pay had to cover every expense, regimental as well as personal ; but instead of a deduction of twenty pence a week on account of clothing alone, as quoted in Sir John Harington's letter in the last chapter, the deduction was twopence a day for every outlay over and above lodging, food and necessaries. Moreover, although there was sometimes great delay in the issue of pay, the Cromwellian soldier, with his higher standing, was much better able to protect his interests and see that he was not defrauded.

If little is known of the system of army administration at this time, still less is to be gleaned about the organization of the Ordnance department. There was no Master of Ordnance ; but after Parliament seized the keys of

the Tower in 1642, it appointed Sir David Walter as Lieutenant General, who was relieved in 1648 by Major General Harrison. It is a striking commentary on the zeal for honesty in the public service which was so marked a feature of this time that the post was abolished four years later because it was found that General Harrison had received £3065 as poundage on expenditure amounting to £122,629.

Instead of these officials, affairs seem to have been managed by a Parliamentary Committee,¹ and purchases to have been controlled by the Commissioners for the Admiralty, even when providing for the land service. The subordinate officers, Surveyor, Storekeeper, Clerk of Deliveries and Clerk of the Ordnance—whom we find in the reign of Elizabeth—presumably remained in existence, and when regiments returned arms or armour they were required to pay for any deficiency.

A bill book, dating from 1654 to 1658, in the Public Records office, gives an idea of the activities of the department though, curiously enough, it makes no mention of muskets.

It records the purchase of guns, the larger of iron, the smaller of brass. These are described by their length and weight, the biggest being 12 ft. long of about 58 cwt. There was considerable difference in the weight of each individual piece, and they were paid for by the hundred-weight.

There are entries of ship's carriages, trucks and axle-trees, powder, shot, bandoliers (the boxes made of wood with whole bottoms and oiled), match, saltpetre, rammers, wadhooks, tampeons, sponges and powder ladles (sometimes combined into one implement), and wheelbarrows for powder, close-boarded and covered with canvas. By way of arms there are long and short pikes, hangers,

¹ After the final overthrow of the Royalist cause at Worcester, Cromwell, the victorious commander-in-chief, settled down to quiet and assiduous attendance on the standing committees of the Ordnance and other great public services for some nineteen months until he assumed the unofficial dictatorship of the State and was eventually named Protector. Frederic Harrison's *Oliver Cromwell*, Chapter X.

halberds and ammunition swords. This term was often applied to the soldier's equipment, and survives in the expression "ammunition" boots. Miscellaneous articles include lanterns, tarpaulins, rope, pulleys, hides, locks and hinges, and what are classed as "petty emptions," expendable stores such as paper, canvas, oil, nails, tallow, pitch, and needles and thread. There are records of repairs by contract to ship's gun-carriages at Chatham, Dover, Woolwich and Deptford, as well as at the Tower. One entry records the purchase of a flag 3 yards by 10 bearing His Highness and the Commonwealth Arms for the Tower for £15 and an extraordinary one of sarsenet for £67. Except for the last items this expenditure was evidently in the main on account of the navy.

Then, in 1657, there appear a succession of purchases for "His Highness' Forces at Mardyke in Flanders," also made by direction of the Admiralty Commissioners. These include quantities of wheelbarrows, spades, shovels, baskets, fascines, hurdles, baulks, spars, mallets and some dark lanterns for field engineering. There is one brass mortar piece of $18\frac{1}{2}$ cwt. at £36 1s., another of $12\frac{1}{2}$ cwt. at £10 2s. 3d.; horse-shoes and nails, and just a few sets of harness. There are several thousand hand grenades at 1s. each with fuzes. This is the first entry for the hand grenade, which later leapt into prominence as a missile and then became moribund equally quickly until revived in the Great War. One list of purchases is evidently to equip the Field Train and gives an idea of what the interior economy of an Ordnance depot must have been like. It includes 12 trenchers, 6 bowls, 6 spoons, 6 platters and 6 dishes, apparently for the use of the staff, and in the way of tools and implements the following:—

Mallets	6	Gimlets	1
Powder dishes	6	Hammers	1
Dark Lanterns	1	Planes	1
Funnels	3	Whetstones	1
Chisels	8	Hatchets	1
Rasps	4	Saws	1
Files	2	Knives	1
Stocks with 6 bits	2	Sieves	1
Axes	1		

This miscellaneous collection had all to be purchased ; and the possibility of damage or loss involving replacement does not seem to have been contemplated.¹ Other entries record the purchase of 1100 French tents with ropes, poles, pins and hammers at 23s. each, and there was evidently delay in providing these ; for an officer writes, "the 1000 tents ordered us by the Council 5 weeks ago are not yet come, which causes great sickness among us, having not one piece of wood within six miles to hut us with." There are also entries of 2651 Cheshire cheeses and 2500 pair of shoes and stockings with "great dry fattes (vats) for packing up of the soldier's clothing." These, however, were exceptional purchases, the Ordnance dealt with neither food nor clothing as a rule.

Before closing this chapter, the causes that led to the victory of the New Model Army over the forces of the Crown are worth a few moments' consideration. Able as were some of the commanders on either side, neither had achieved decisive result after a lengthy struggle. That the new army succeeded, where the forces previously employed had failed, cannot be attributed to its constituent parts. The officers were drawn from every grade of society and were not as a rule professional soldiers, versed in the arts of war. Of its original 14,400 infantry more than half were pressed men ; and a considerable number deserters from the other side attracted by the offer of regular pay and clothing. Not until six years later could the army be maintained entirely by voluntary enlistment. Although a similar organization knit the whole together, there is no reason to think that this tie alone would have prevented it from melting away, like its predecessors, with the heat of battle.

Fundamentally the success of the New Model Army was without doubt due to Cromwell's leadership and military skill. But the new spirit of honesty which he instilled into army administration, and the attention he paid to the soldier's welfare, were also undeniably all-

¹ The equipment also includes two "lawne searces" and two "haire searces," the meaning of which I have been unable to elucidate.

important factors. From its first inception the new army, with its leaven of Cromwell's Ironsides, seems to have severed all connection with the past. Doubtless there were cases of fraud on the part of officers at the expense of the State and their men, it would have been impossible at once to eradicate this vice, but they were exceptional and not general. A very important feature was that, traffic in commissions being almost unknown, there was no incentive for the officer to recoup himself for his outlay. His pay was good, in the upper ranks high, facilitating the establishment of a standard of rectitude hitherto unknown. For the soldier there was a more regular issue of pay and a proper allowance of clothing of good quality, or trouble if it were not forthcoming. His well-being improved and a very different type of citizen from professional marauders like Pistol and Nym or impressed wastrels like Shadow, Feeble and Wart was attracted to the ranks under the leadership of Cromwell, the keynote of whose administration was that an upright moral character was the first qualification necessary for public service ; with the result that a stern sense of discipline and duty replaced the lax military traditions of the past.

With honest administration as a foundation, the matchless genius of Cromwell, and his shrewd skill in selecting the right men for posts of responsibility, enabled him to wield the army as such a potent and efficient instrument of government that his Protectorate was esteemed at home and feared abroad. The like of the Cromwellian army has never been seen before or since. It occupies a niche in history altogether by itself, differing as much from the troops of the past as from those of the future. The profession of arms, for long degraded, became one of the highest honour, and the army was always respected even if it latterly became unpopular by tending towards a military dictatorship.

PART II

**THE RESTORATION TO THE
INDEPENDENCE OF AMERICA**

CHAPTER IV

ARMY ADMINISTRATION AFTER THE RESTORATION

THIS chapter is largely a digression, a description of the army that came into being at the Restoration, and of its method of administration, a method founded on far earlier practice. To treat the soldier merely as a dummy, having at different times different types of clothing and equipment, provided by different systems, would be but dull and devoid of human interest. To make matters intelligible the reader should have some idea of what manner of man the soldier was, what sort of life he led, how he was treated by his country. In short we must try and breathe life into the lay figure, and convert it into a creature of flesh and blood.

The New Model Army had been formed for the express purpose of defeating the Royalists ; but wars in Scotland, Ireland and elsewhere supervened, and it remained in being, with fluctuations in strength, throughout the Protectorate. From being the idol of the nation, however, the army latterly became unpopular, tending to develop into a military dictatorship ; and at the Restoration everyone was heartily tired of military rule, and in favour of its disbandment and of reversion to the old system of a county militia.

Had he so wished, Charles II might probably have retained at least a part of the army of the late Commonwealth in his service. But he feared its independent and uncompromising spirit. A body of men who had been instrumental in chopping off his father's head might deal with him in similar fashion, and he consented to their entire disbandment. The process, however, was arrested just before it reached finality, owing to the insurrection of a fanatical sect of Fifth Monarchy men. To quell the rising, Monck, the Captain General, was recalled with certain regiments from Scotland. This made it necessary to retain a small force for the time being. All that was left of the forces of Parliament was a body of

troopers, known as the Lord General's Life Guard of Horse, and Monck's own Coldstream Regiment, known as the Lord General's Regiment of Foot. These were paraded on Tower Hill on February 14th, 1661, to the number of about 170 horse and between 900 and 1000 foot. The two bodies were formally disbanded, laying down their arms as soldiers of the Commonwealth and taking them up again as Royal troops, with three cheers for the King. The mounted portion became the Lord General's Troop of Guards and the Coldstreamers the Lord General's Regiment of Footguards, afterwards the Coldstream Guards, the oldest regiment in our army.

The King then raised a bodyguard of his own (now the Grenadier Guards) which, being formed largely from those who had followed the fortunes of the Stuarts, was likely to be more amenable to his ambitions. Regiments of Horse, in which were incorporated the Lord General's Troop of Guards and which became the Life and Horse Guards, were next raised; and it has been by adding fresh units to this nucleus that our present regular army was gradually built up.

The careless rapture which greeted the return of the exiled monarch soon evaporated, however; and throughout the reigns of Charles II and James II there were vigorous protests by both Houses of Parliament against such an unconstitutional procedure as the maintenance of a standing army by the Crown. "So long as the soldiery continued," it was said, "there would be a perpetual trembling in the nation, for they were inconsistent with the happiness of any kingdom"; and again, "with the militia the country had safety in the year 1588. That force was our security at home for it would defend and never conquer us." The dislike to a standing army was due to the belief that the King would employ it to enforce his will. James II, in fact, did try to govern by means of the army, into which he introduced a strong Irish Roman Catholic element. It was feared that he would employ it as an instrument for re-introducing that faith into England, and it was this that lost him the throne.

After the revolution of 1688, the Bill of Rights was enacted. In its preamble this sets forth that James II had endeavoured to subvert and extirpate the Protestant religion and the laws and liberties of the Kingdom, by keeping a standing army without the consent of Parliament; and, "in the vindication and assertion of the ancient rights and liberties of the people," it proceeds to declare that the raising or keeping of troops within the Kingdom, unless with the consent of Parliament, is illegal.

It was on the basis of this declaration that William of Orange accepted the throne, and even now our regular army only maintains its right to exist on the annual consent of Parliament. At the same time the militia, the sole force permanently provided for by the constitution under the old Statute of Winchester, and which had formed the groundwork of Cromwell's army, was revived. But the militia could only be called up to defend the homeland and was organized purely on a county basis. It was obvious that the late King was seeking aid in France and raising his standard in Ireland. War was inevitable and Parliament was forced for the time being to tolerate the existence of a standing army which, however, was purged of its Irish element.

Moreover, despite frequent vigorous protests, which continued under the Hanoverian kings, this army inevitably and inexorably grew in strength; for during the eighteenth century one war followed another. We were almost continually fighting in some part of the globe and laid the foundations of our Empire.

It may be well to chronicle the principal events. Charles II married a Portuguese Princess who brought him Bombay and Tangier as a dowry. Bombay was one of the chief centres from which we penetrated into India and captured its trade from our rivals in the East, the Portuguese and Dutch. Tangier was quickly lost, but in exchange we took Gibraltar in 1704, thus founding our Mediterranean possessions and influence. The union with Scotland took place in 1707, but there was a Stuart rebellion in 1745, which was quelled in the year following at Culloden; and in Ireland trouble was chronic. There

was war with France from 1689 to 1697, which was renewed, under Marlborough, in the reign of Queen Anne. The Peace of Utrecht in 1713 gave us the French possessions of Nova Scotia and Newfoundland. Then followed a period of quiet until 1739, when we went to war with Spain, and in 1740 with France, the war spreading to America and India. There was a semblance of peace in 1748 after the Treaty of Aix-la-Chapelle, but it was little more than a semblance; war was renewed, and resulted in our wresting from the French their possessions in Canada and India. In 1762 we were also at war with Spain. Peace ensued in 1763; but the American War of Independence, in which France, Spain and Holland ranged themselves with the insurgent colonists, broke out in 1775, and was terminated by the Peace of Versailles in 1783. In 1787 Australia, discovered by Captain Cook a few years before, began to be colonized. Next followed the French revolution of 1789, resulting in strife which spread all over Europe and culminated in the Battle of Waterloo. During this time the Cape of Good Hope and Ceylon came into our possession, owing to the weakness of Holland.

Altogether it was a stirring time. Each new outpost of Empire required a garrison; and it is not surprising that our military forces grew in strength. Nevertheless the nation continued to resent the idea of having troops quartered on it in England. This being so, it was not to be expected that Parliament and the people should interest themselves in the well-being of the soldier who was looked on as a temporary though necessary evil, to be discountenanced in every way.

To take one example: we are so accustomed to having barracks that we look upon their provision as a matter of course. They add to the comfort of the men, help the young soldier to learn from the old, and foster esprit de corps. There were no barracks, however, in England, beyond a few small ones at permanent garrisons, till 1792. Abroad, and in Ireland and Scotland, they were necessary, either as strongholds, or because there was no other way of accommodating the troops; but such as

existed were execrable. The erection of barracks in England was steadfastly and expressly discountenanced. It was believed that if officers and men were segregated, they would intrigue to the detriment of constitutional government. Further, the idea of barracks was associated with slavery and prison. Instead, it was left to the King to disperse his troops by small fractions all over the country, and as the inhabitants objected to having men billeted on them, the soldiers were quartered in ale-houses and taverns, which were required to furnish rations, fire and utensils for cooking, vinegar, salt, candles, three quarts of beer, rum or cider, at fixed prices. When this proved unremunerative, publicans would sometimes take down their signs and throw up their licences, if they knew that troops were due in the neighbourhood. For similar reasons all soldiers were removed from any district where a parliamentary election or assize court was to be held lest they should influence the election of a Royal nominee, or the result of an important trial.

There was another reason why the new force born at the Restoration should have poor chances of healthy growth and nurture. During the Commonwealth the vogue of purity and sobriety had been carried to an extreme. At the Restoration there was a violent rebound to the opposite extreme. Public morality became shamefully lax, and bribery and corruption flourished to an extent that now seems almost incredible ; Ministers and others occupying the highest positions in the State taking bribes openly and unashamed. A public enquiry found that Marlborough received in nine years as a "perquisite" £63,000 from contractors for rations. It was even hinted that he took bribes from the French king ; and although there was never any proof of this, the mere fact that such an accusation could be made shows that it was not regarded as impossible. With such examples in high quarters, it was not to be expected that officers should be less corrupt than others ; and many of them made use of their positions to defraud the Government and purloin the pay of their men in the most shameless manner.

Altogether, in one way and another, the new army was

born under an evil conjunction of stars. The old weeds had indeed been scotched and kept under during the Commonwealth, but they had not been killed and now reared their heads higher than ever.

The army was at first a personal appanage of the Crown, paid for out of Charles' private purse, he having married an heiress. The cost of its maintenance was next defrayed from grants for general purposes of government ; and finally from specific sums, voted by Parliament from year to year. These were divided into ordinary and extraordinary expenditure. The former represented the regimental pay ; the latter a lump sum voted to the Crown for purposes of war—such as the raising of temporary forces, the hiring of mercenaries, the supply of camp equipage, or purchases and impressments made in the theatre of operations.

Regiments were raised, as in bygone times, by means of indentures, entered into between the King and some nobleman or gentleman, who became their colonel ; and who, in return for the pay, undertook to provide a body of troops. Thus the regiment was treated as the personal property of the colonel, who at first clothed and equipped it entirely as he pleased ; similarly the company or troop was looked on as the property of its captain. Many of the officers had served abroad during the Commonwealth, where the buying and selling of commissions was in vogue ; and this pernicious custom became rife almost at once. To such an extent did it flourish that an edict of Queen Anne's reign prohibits the practice of granting commissions (which were of value) to children except in the case of two per regiment, where the fathers had been killed or suffered extremely in time of war. It was further ordered that these infants were to be replaced on service by officers of other regiments.¹ Although the sale of commissions was declared

¹ The custom survived until a much later period, and was, in fact, only abolished when the Duke of York became Commander-in-Chief. Sir Walter Scott, for instance, referring to his own day, writes of commissions being granted " to young ladies whose pensions were not to be had."

illegal early in the eighteenth century, it continued to flourish ; and was later countenanced by the publication of tariffs, showing the prices authorized for each step in rank. Cromwell's army had been democratic, and it was not uncommon for the soldier to rise to commissioned rank. This now became impossible ; as indeed it would have been thought inconceivable.

When a new regiment was raised, bounty or levy money (the rate was £2 per man for the infantry) was granted to the colonel to provide for his initial outlay ; and he found his recruits, and usually his officers, as and how he pleased. It was considered that this system gave officers a direct pecuniary interest in preventing discharge, desertion or death ; for the cost of maintaining a serving soldier was less than that of outfitting a recruit. Except when men were specially enlisted for a short term of years in time of war, there was no limit to the period of engagement. When the soldier became too old for efficient service he was classed as an invalid (in the sense of being in-valid), and told off for employment in a garrison ; and it was only when he was too decrepit for even such light work that he was discharged.¹

As Parliament grudged money for the army, it naturally followed that the soldier was ill paid, ill clothed and ill

¹ The following is from Anson's *Voyage Round the World* in 1740. "Sir Charles Wager too joined in opinion with the Commodore, that invalids were in no way proper for this service, and solicited strenuously to have them exchanged ; but he was told that persons who were supposed to be better judges of soldiers than he or Mr. Anson, thought them the properest men that could be employed on this occasion ; and upon this determination they were ordered on board the squadron on the 5th of August ; but instead of five hundred, there came on board no more than two hundred and fifty-nine ; for all those who had limbs and strength to walk out of Portsmouth deserted, leaving behind them only such as were literally invalids, most of them being sixty years of age, and some of them upwards of seventy. Indeed it is difficult to conceive a more moving scene than the embarkation of these unhappy veterans ; they were themselves extremely averse to the service they were engaged in, and fully apprised of all the disasters they were afterwards exposed to. . . ." Seeing the hardships and losses to which the expedition was exposed it seems improbable that one of these old soldiers can have lived to see his native land again.

provided for in every way ; and there was great difficulty in getting recruits. All sorts of expedients, short of raising the scale of pay and standard of life, were employed. Pressgangs reappeared. Bounties were offered and there would be unseemly fights between regiments or crimps for the possession of the recruit and his bounty, by which the man himself benefited little. Conflicts between recruiting parties and the civil authorities, magistrates and mayors, were not infrequent. The enlistment of a recruit was usually the occasion for an orgy of drunkenness ; and, as the bounty money went to provide him with an outfit of necessaries, the soldier was likely to start his career in debt to his captain. A common practice was to make a man drunk and force a shilling on him ; this being held to seal the contract of service. The King's shilling, symbolizing bounty money, is a relic of the old system of providing conduct money, mentioned in Chapter I, which existed as early as the reign of William Rufus. Debtors in prison were released on undertaking to enlist ; convicts under sentence of death or transportation (it must be remembered that such punishments were given for what we now regard as trivial offences) had their sentences commuted for service in the army ; and county authorities were ordered to enlist all rogues and vagrants, or those without employment or visible means of subsistence. The result can be guessed. The army was composed of criminals and derelicts ; drunkenness, debauchery and every form of vice abounded ; desertion and fraudulent enlistment in particular being encouraged by the system of bounties.¹

Ill though he was paid, there seems a spirit of swagger and bravado about the soldier, full of strange oaths and

¹ In 1787 Thomas Hodgson, aged twenty-six, was convicted of robbery and executed for it. He confessed to having enlisted forty-nine times into regiments in England, Scotland and Ireland under different names, often doing so to different recruiting parties of the same regiment, and seldom staying more than a day or two before deserting. He was convicted three times for desertion and whipped once for it ; he obtained 397 guineas in bounty money and 57 guineas by robbery. But the dying confessions of malefactors are notoriously unreliable.

seeking reputation at the cannon's mouth, who served in the spacious days of Elizabeth. In those adventurous times campaigns were short and sharp ; discipline was loose if severe ; there was loot to be picked up ; and the soldier, like the sailor, probably looked down on the stay-at-home civilian. This spirit is very lacking in the soldier of the eighteenth century. A certain glamour, no doubt, there was with all this fighting in strange countries ; but, after all is said and done, the soldier, now enlisted for life, spent far more time in billet or barrack than on the field of battle. Most of the troops were stationed abroad ; and once a regiment arrived at its destination, there it stayed until there was some occasion to move it elsewhere ; and there the soldier eked out a miserable existence. One regiment is said to have spent fifty-eight years on end in the West Indies. Anything more monotonous than life at such a place as Gibraltar, for example, it is difficult to conceive. Nothing was provided in the way of amusement or healthy recreation ; parade once over, the chief relaxation for officer and man was to get drunk. In hot climates yellow fever was prevalent ; and in America there was a very rigorous winter to contend against, with inadequate barracks, bedding and clothing.

Foreign service was practically equivalent to a sentence of transportation for life ; it was awarded as a court-martial punishment, and it was when ordered abroad that desertion was most rife. On such occasions regiments were assembled in the Isle of Wight, from which it was difficult to escape, or in prison hulks, where they might be cooped up for months at a time with serious results to health. Even when units were moved from place to place in England, they were sent by coastwise freight to prevent desertion on the march ; a custom that actually survived until the close of the last century, despite its inconvenience. It is not surprising that no respectable lad would volunteer except as a last resource to escape from some family trouble or entanglement. The Red Coat was associated with every form of vice and degradation, and the most awful sorrow that

could befall a respectable couple was for a son to 'list for a soldier.

At the Restoration the infantryman's pay was reduced to eightpence a day, and at that figure it remained. Even in 1660 this was less than the wage of the agricultural labourer ; and later the contrast was greater, for agriculture made great strides in the next century, in the profits of which the labourer shared, earning by 1750 from 1s. to 1s. 6d.

We are so accustomed to find everything the soldier can possibly require, in any conceivable conditions, provided for by scales and regulations, that it is necessary to emphasize the fact that no regulations existed bearing on such subjects. Except for special war expenditure on items such as camp equipment, the regiment had to support itself entirely on the soldier's eightpence a day. The Master General of Ordnance furnished any muskets or ammunition needed on payment, the publican rations, and the regiment purchased anything else it might require as and how it pleased. When hospitals were established in time of war, the cost of their maintenance was charged to those whose sick and wounded they accommodated. If there was extra wear and tear to equipment on service, the unit had to make good the deficiency. It had to repair its own equipment and weapons, and at first even to pay for arms and ammunition expended on service. Later on certain concessions were made, but originally the only free grant was the first set of muskets issued to the newly raised regiment.

The pay was divided into two portions called off- reckonings and subsistence ; the amounts in the infantry being respectively 2d. and 6d. The former was credited to the colonel to provide clothing and appointments. The latter went to the captain, being again divided into two portions ; 3s. a week, which the soldier was supposed to receive in full to pay for his board and lodging ; and the balance (which has been described, with unconscious irony, as "that portion of the soldier's subsistence which is not issued to him as subsistence"), which was kept

by the captain. As may be imagined there were many incidental expenses to be booked up against this residue. Necessaries absorbed a large amount ; washing and cleaning materials, fees to the barber chirurgion for hair-cutting, the cost of repairing uniform, arms and equipment, medicine for the soldier when he was sick, and a coffin when he died.

Moreover, the eightpence a day was received neither in full nor punctually. In the first place Charles II appointed in 1662 a Paymaster General, who was really nothing more than his private banker, to conduct the business for him. The King was usually in debt to his Paymaster; the latter always one year in arrears in the issue of off-reckonings. Furthermore, to recoup himself for his trouble, he was allowed to retain one shilling in every pound. Next there followed a deduction of one day's pay to cover the cost of erection and maintenance of Chelsea Hospital, with accommodation for some 600 broken soldiers, either of long service or disabled in war ; the site, according to tradition, being a gift from Mistress Nell Gwynne. The amount left to the colonel to clothe and equip his men was then as follows :—

		£	s.	d.
Total pay @ 8d.		12	3	4
Deduct subsistence @ 6d.		9	2	6
		<hr/>		
Gross off-reckonings		3	0	10
Less Poundage	12 2			
1 day's pay for				
Chelsea Hospital	8 —	12	10	
		<hr/>		
Nett off-reckonings		2	8	0
		<hr/>		

Seeing that the cost of completely outfitting a recruit, including his sword and belt, was quoted officially in 1677 as £2 13s., this was just about sufficient; but these were by no means the end of the deductions. Gradually a host of other officials came into existence ; all of whom, in accordance with the custom of the time, were unpaid and expected their commissions. Many of these were at first unauthorized; but, in the course of years, their

appointments and fees received the sanction of tradition. The colonel was allowed a clerk to look after his accounts, who received his salary out of the soldier's pay. This clerk became the regimental agent ; and it is thus that firms like Cox and Holt came into existence. The widows of officers killed on service, if left penniless, were given pensions from the same source. The auditor required his fee before he would pass the regimental account. The Commissary General of Musters had his share, and his subordinates exacted 10s. for each company they mustered. The Ordnance charged a fee for delivering muskets or ammunition. In fact, everyone concerned with the army was remunerated out of the soldier's eightpence a day.

The plan was something like that mentioned in the story of the man who fed his hungry dog by the doubtful expedient of cutting off a piece of his tail and giving it him to eat ; and, to carry the simile further, the result was the same. The strength of the regiment was curtailed to meet these expenses. The old irregularity of bearing imaginary men on the establishment was revived ; those who were promoted or transferred would be shown twice over, and so on. Tradesmen and others were dressed up in uniform so as to pass muster. The Muster-masters said that if they raised objections the matter was not taken well by the officers ; and seeing that they were dependent upon the goodwill of these same officers for their fees, it is not to be supposed that they were over-zealous. These fictitious soldiers were called Warrant men, Contingent men and Widow's men ; and in the cavalry Hautbois.¹ These frauds were made easier by the frequent changes in establishment that occurred. Such a thing as an army reserve was undreamt of, and establishments were raised or lowered according to the necessities of the moment.

¹ The hautboy was introduced as a musical instrument at the Restoration, but not used by cavalry. An old story, current in the army, relates that either George I or George II once asked General Churchill where were his hautboys ? The General slapped his pocket, making his money ring ; and answered, " Here they are, please your Majesty, don't you hear them ? "

The pay of the trooper was 2s. 6d., and that of the dragoon 1s. 6d.; but they were little better off than the infantryman. More was spent on providing a handsome uniform; the trooper had to find his own horse or was charged for it by stoppages; and saddlery, forage, veterinary and farrier's fees all had to be booked up against the mounted man's pay.

Sometimes a regiment might be in credit; but this would not benefit the soldier. The surplus went to the officers and tended to increase the value of a commission. More often it would be in debt; which would be met by increasing the number of fictitious men, by supplying insufficient and shoddy clothing, or by making money out of the sale of necessities, whereby the deficit was transferred to the private, who might be in debt to his captain from one year's end to another. There were times when no firm could be found willing to clothe a regiment, so poor was the prospect of getting paid in cash. Payment was by means of debentures or tallies—acknowledgments of indebtedness—which the tradesman had to redeem as best he could, often at a discount of 35 per cent. In 1690 the Paymaster General was ordered to retain the off-reckonings until debts were settled, but the order was not enforced.

The frauds practised at the expense of both soldier and State were disgraceful. Sometimes the colonel would take a direct bribe from his clothing contractor; his contract might show a nominal price, the real one being less; or he would receive a percentage commission. The agency was sold to the highest bidder who expected his share in the plunder. In one instance a colonel demanded £300 for placing an order for clothing; his agent overbid with an offer of £400. One colonel was cashiered for purchasing old clothing from the Jews and charging it to the soldier as new; another for demanding exorbitant prices for necessities, and confining and threatening his men when they complained. A common plan was to refuse to give the discharged man clothing paid for out of his 2d. a day, or to refund him its value; the clothing being transferred instead to his successor. In

fact, the colonel regarded the off-reckonings as part of his emoluments ; and it was exceptional for the soldier to get his full 3s. a week subsistence, and not be half-starved. Some few regiments might be well clothed, but if abroad they were usually in rags. After the colonel had taken his share, the captain followed suit ; next came the quartermaster, who had his finger in the pie ; and if there was anything left it is to be expected, with such examples before him, that the sergeant had his small pickings as well. That the soldier should thief and loot is not to be wondered at, and thus the Red Coat became even more hated. The army in Ireland had its own treasurer, a member of the House of Commons, who managed to get a troop of cavalry for which he drew pay as if it was complete. His troop consisted of himself, two clerks whom he called officers, and a standard which he kept in his bedroom.

During the Commonwealth clothing was provided by centralized contracts, supervised by Parliament ; but, by refusing to countenance the existence of a standing army, this salutary safeguard was lost. Gradually, however, Parliament was forced to take notice of such gross scandals ; and the first germ of the War Office came into being in the form of a Secretary-at-War. This official was at first nothing but a secretary to the Commander-in-Chief in time of war. But, after Monck, the King took command of the army ; and the secretary, under his orders, prepared warrants authorizing the raising or movement of troops, etc. Next, when by parliamentary statute the army obtained some show of a right to exist, the post became political ; and was often held by a prominent Minister. But while this afforded some opportunity for ventilating grievances, if not for redressing them, it is to be doubted whether the army benefited much by this change. Ministers were corrupt, discipline suffered and the army became a pawn in the game of politics. The importance of the post of Secretary-at-War varied. Sometimes he was all powerful, at others little more than a secretary, conveying decisions ; and the

office must not be confused with that of the modern Secretary of State for War. The Secretary-at-War was not a recognized State official like a present-day Cabinet Minister ; nor was he, in virtue of his position, responsible for military policy.

CHAPTER V

THE BOARD OF ORDNANCE

SEVERAL circumstances combined to bring the Ordnance Office into prominence as one of the greatest institutions of the State from the period of the Restoration onwards until after the Crimean War when, shorn of its glories, it was merged with the army.

In the first place it was impossible for the standard of rebellion to be raised without connivance and assistance from the Ordnance. The Tower had been a very valuable asset to Parliament in its struggle with Charles I; and although, at any rate nominally, its control reverted to the Crown at the Restoration, Parliament kept a watchful eye over matters. The issue of arms was very jealously hedged round with restrictions. At first they were supplied only under orders of the King in Council attended by his principal officers of State. Later on each individual transaction bore the sign manual of the Sovereign and was countersigned by the Secretary-at-War on behalf of Parliament.

In the next place the Office bore a very important part in the development of the Empire. It set up an establishment at every new outpost with forts and barracks, provided accommodation for the troops and civil government and had the care of Crown lands. Its arms embraced a very wide range of duties and its finger tips reached every fresh British settlement except in India, where the trading company of the East Indies had its own troops and establishments.

Lastly, with the expansion of Army, Navy and Empire, a vast treasure was locked up in its munitions and a great sum expended annually on their maintenance.

The Master Generals of Ordnance number among them many of the greatest figures of our history—such as the Dukes of Marlborough and Wellington—though they were by no means always soldiers. They were Parliament's advisers on military matters, became Cabinet Ministers, had their own Treasury, framed

their own estimates and managed their own affairs to a great extent independently of either the army or navy.

In 1660, a Master of Ordnance was re-appointed and shortly afterwards the work was entirely consolidated under a Master General and attempts made to eradicate certain abuses of old standing. In the past the principal officers had been allowed to sell the places under them and claimed unserviceable guns and stores as perquisites. In 1664-65 these privileges were abolished and salaries granted instead.¹ The office of Lieutenant General was revived, but it being judged to be improper that the occupant of this post should receive "poundage" (sixpence in every pound disbursed), a Treasurer was appointed instead to receive and disburse moneys. An Order in Council of 1667 recites that the governors of garrisons and forts, as well as other commissioners for fortifications and repairs, had received various sums of money and cut down timber by order of the Exchequer, under pretence of executing repairs and without rendering accounts of either money or materials. The Council, therefore, commits the care of *all* forts to the Office of Ordnance, and empowers it to call governors, commissioners and others to account for their doings. This was

¹ But it took long to stamp out this vicious practice. The Duke of Wellington, a century and a half later, poured out the vials of his wrath on certain officials discovered to be appropriating the timber of condemned gun-carriages, and to this day there are officers' quarters in some old Ordnance depots with furniture made by Ordnance artisans from Ordnance materials. Moreover, certain perquisites survived officially. At the siege of Gibraltar in 1727 all the Ordnance staff had their share of the value of captured shot and shell, the Storekeeper receiving £30 10s. This authorization is quoted in the *Journal of the Society of Army Historical Research* for April 1925. Grose states that the church bells of captured cities were also claimed, the origin of this custom being perhaps due to the fact that bell metal would be valuable for casting brass guns. In 1783 the vestrymen and churchwardens of St. Michael, Charlestown, in America, addressed a petition to the Secretary-at-War praying for the restitution of those taken down and carried away by Major Tralee of the Royal Artillery. The letter is reproduced in the same number of the above-quoted *Journal*.

followed in 1682 by a Royal Warrant which made the Master General of Ordnance responsible for training Master and subordinate gunners at every garrison.

Thus the custom of feudal times whereby the governors of various important castles were directly accountable for their defence, having their own gunners and artificers—officers of the Ordnance—disappeared. At this time also there began to be a differentiation between the Royal Navy and the merchant service, and the Brethren of Trinity House, whose place of assembly was at the Tower (as it remains to this day), ceased to have any responsibility for arming men-of-war. The centralized and consolidated Ordnance Office, with its headquarters at the Tower, was henceforth solely responsible for all the defences of what was soon to develop into the British Empire. Ireland alone had a separate establishment, the two being merged in 1801 consequent on the Union of the three Kingdoms in the previous year.

In 1683 a very important and comprehensive Warrant appeared, setting forth in great detail the permanent establishment, rates of pay and duties of every official from the Master General with £1500 a year as salary down to the labourer with a yearly wage of £26. It is on this codified document, which remained in force with few alterations until the Crimean War, and which was itself framed on far more ancient procedure, that the regulations for Army Ordnance services of to-day have been built up.¹

The five principal officers, the same as in the reign of Queen Bess, formed a Board of management with the Master General as chairman, decisions being taken by vote. A chief business of the Board was to decide what replenishment of stocks was necessary and submit monetary estimates to Parliament for their provision. In addition each of the five had his specific duties and was to keep a journal in which to record each day above his signature the particular transactions for which he

¹ A complete copy of the Warrant, with its subsequent amendments, exists in the War Office Library.

was responsible. Stated briefly these duties were as follows :—

The Master General dealt with matters of high policy and the Board, sitting with him in conclave, discussed and decided how to give effect to that policy.

The Lieutenant General presided at meetings in the absence of the Master, and was in charge of the more military part of the work. He was responsible for the efficiency of the Train of Artillery, and for the training of gunners and fire-workers ; and was to attend to the shooting-off of great pieces of ordnance at the Tower on the King's birthday and coronation day.

The Surveyor General was the technical officer. He was to examine everything purchased or manufactured, and see that it was stamped, when approved, with the Government mark. He was to certify all bills both as to quality and quantity and to condition stores when returned, classifying them as serviceable, repairable or unserviceable. He was to survey the stock from time to time to see if it was in good order and properly looked after,¹ and to prepare a ledger detailing all issues and receipts.

The Keeper of the Stores, or Storekeeper General, was their custodian, responsible for quantity as the Surveyor General was for quality, though with allowance for wastage of "leakable or perishing stores," and he had to

¹ Scott, in *Peveril of the Peak*, describes Charles II proceeding to the Tower with the intention of making a survey of its contents, which must, I think, be founded on fact.

"Charles, who often formed manly and sensible resolutions, though he was too easily diverted from them by indolence or pleasure, had some desire to make himself acquainted with the state of the military stores, arms, etc., of which the Tower was then, as now, the magazine ; and, although he had brought with him the usual number of his courtiers, only three or four attended him on the scrutiny which he intended. . . .

"The Duke of Ormond, well known for his services during the great Civil War, was, as we have elsewhere noticed, at present on rather cold terms with his Sovereign ; who nevertheless asked his advice on many occasions, and who required it on the present amongst others, when it was not a little feared that the Parliament in their zeal for the Protestant religion might desire to take the magazines of arms and ammunition under their own exclusive orders."

find bonded security, so that the Board might be indemnified in case of loss or malversation. He rendered an annual account, in the form of a ledger, of everything committed to his care.

The Clerk of the Deliveries was the issuing officer. He prepared the necessary orders or "proportions,"¹ armed with which, after signature by three of the Board, he took over what was to be issued and was responsible that it was delivered and a receipt obtained.

The Clerk of the Ordnance prepared estimates of expenditure, dealt with money accounts and drew up contracts and bargains. He also kept a record of every stock transaction from which he was to compile an annual ledger.

Among subordinate officials were the Treasurer, in charge of the Board's moneys out of which he was to keep no poundage; the Engineer, expert in fortifications and works and skilled in mathematics, particularly stereometry, altimetry and geodesy; the Deputy Keeper of the Armoury containing defensive armour; the Keeper of the Small Guns with a Furbisher to oil and clean them; the Master Gunner of England who was to "profess and teach his art to our undergunners in the exercise of shooting off great pieces of ordnance, mortar pieces, etc.;" the Firemaster to prepare saltpetre, brimstone and powder for service, make fire-balls and fill grenades, apply petards and train fireworkers and petardiers; two Proof-masters who, with oversight from the Surveyor General, were to prove guns and ammunition; the Clerk of the Cheque, responsible for time-keeping and wages; the Waggon-master who attended the Sovereign in his Royal Progresses, had charge of carriages and transport for the Siege Train and was to see they did not "cloy up the ways nor hinder one another in marching"; the Purveyor in whose care were lighters and boats (shipping for overseas was got through brokers or by

¹ The word had for long been in use in a general military sense:

"Therefore let our proportions for these wars
Be soon collected."

Henry V, Act 1, Scene 2.

advertisement); the Messenger who, besides attending on the Board, was to ascertain the market price of any commodity required; and various clerks and labourers who were to be honest, attentive and zealous in performing their duties.

James II who, whatever his faults, seems to have taken much interest in the Board of Ordnance, tightened up this great Warrant of 1683 still more in the first year of his reign. He ordered that the Board, when examining each month the proportions of the Clerk of Deliveries, should see what steps had been taken to give them effect. He directed that a stock-taking or remain be taken every seven years, that an account be kept of "nails, twine, oil, marline and other petty emptions"—that is expendable stores; and that bills for travelling expenses were to be checked by the Board. He discontinued the preparation of a ledger by the Surveyor General. He also transferred to the Ordnance the Office of Tents and Toyles.

The principle underlying the whole system was that no one was trusted. Each service was approved under the sign manual of the Crown, conveyed by Warrant from the Privy Council or Lord High Admiral, upon which an order was prepared and signed by three members of the Board. By means of the entries in the journals kept by each member, every transaction could be checked twice over. For receipts the records of the Storekeeper could be compared with those of the Surveyor General, for issues with those of the Clerk of Deliveries, while both could be counter-checked by the records of the Clerk of Ordnance. In fact, for every potential thief there were two potential detectives. The Storekeepers at out-stations were not allowed to take in or issue anything without an order from the Board and their accounts were submitted to the Tower for examination. Moreover, these Storekeepers also, with their sureties, were personally accountable for any deficiency; and in the same way those told off to take charge of munitions on service, Commissaries of Ordnance as they were then styled, were bonded accountants liable for anything for which they could not account or furnish authority.

The foundation of the system of accountancy, both for cash and stores, was the journal, the earliest form of account book that exists. Originally, as its name implies, this was simply a day-book in which transactions were jotted down when a man's business became too intricate for him to keep details in his head. Next it was divided into a debit and credit side, and in modern times has been further subdivided into specialized volumes dealing with different classes of transactions. Journals are still used in some classes of business and are, I believe, compulsory under French accountancy law. But for stock accounts they are singularly inappropriate, entries affecting every class of store being jumbled up together.

Hence the practice arose of extracting all that related to each specific item from the journal and compiling a ledger with one page or set of columns for each class of article—the "perfect book of the remain" prepared from time to time as far back as the reign of Elizabeth and probably even earlier. The journal, however, the abstract of every official act of the member to whom it appertained and which he was required to sign daily, was, as the book of first entry, the official record of every transaction, whether of money or stock. At this time the ledger was only required to be compiled once a year to strike a balance. Although, to save an accumulation of work, entries may have been, and indeed later were required to be, made more often, yet to compile a current ledger was undreamt of until quite modern times, when reading, writing and arithmetic became common accomplishments and processes of manifolding were invented.

The Office, it will be seen, was administered by a Board, just as the army and navy are at this day, and the regulations for the conduct of business were so well framed as to need only slight alteration in some two hundred years to come. Besides abolishing poundage, the Warrant contains numerous precise injunctions to safeguard against any possible irregularity, the leakage of either cash or stores, the sale of office, bribes to contractors, or the purchase of old materials. To modern

ideas these precautions against fraud may seem over-elaborate, but they must have been very necessary at a time when public office was so debauched. The centralization which made an order, signed by three members, necessary before any transaction, however petty, could be carried out was probably wise for the same reason, and reflects the conflict between Crown and Parliament for control over the country's munitions. This can have mattered little when transactions were few and far between.

But when we turn from the letter of the law to the manner of its interpretation, the contrast is striking. Although, under the Warrant of 1683, the principal officers were enjoined to abide in the quarters provided for them at or near the Tower and to meet together at least twice a week at 8 a.m., they had to be directed by another Warrant in 1690 to attend to their duties instead of performing them by deputy. This discloses a main weakness. Public office was then a sinecure and a means of enrichment at the expense of the State.¹ *Custodes quis custodiet?* With lax supervision, no provision, however tightly drawn, was likely to prove an effective check against dishonesty. Though it was ordered that a septennial stocktaking should be taken, the instruc-

¹ The purloining of Government property by those in high places cannot have been uncommon. Anno 22, Carolus II, Cap. V provides for the taking away of Benefit of Clergy from such as steal cloth from the Rack and such as steal or embezzle His Majesty's Ammunition and Stores.

Under this curious old custom persons of high birth could enter this plea of Benefit of Clergy and escape trial. In ancient times the Church claimed the right to deal with and punish its servants, and that they were exempt from the ordinary processes of law. The Church being then the sole repository of learning it came to be held that the test whether a man was an ecclesiastic or layman was whether he could read or write. As education spread, members of the higher class took advantage of this quibble, and claimed Benefit of Clergy whatever their occupation. There being no ecclesiastical laws dealing with ordinary crime, the result was that the offender of rank went scot free.

The right of Bishops to act as judges over their Clerics, and consequent establishment of Ecclesiastical Courts, dates from the reign of Justinian, and was a powerful lever in the creation of the temporal power of the Church of Rome during the Middle Ages.

tion was persistently ignored at the Tower. There was in practice no attempt to make the Principal Storekeeper pecuniarily liable that his stock was correct. Elsewhere, at home, a septennial remain was usually taken; but abroad, where more laxity prevailed, the stock was only counted when a storekeeper was relieved. There was thus no assurance that a sufficiency was maintained, nor that the stock was in proper condition.

Army estimates were very simple to compile. They consisted of nothing beyond a multiplication sum—the number of men on the establishment times their pay, to which might be added a lump sum to cover extraordinary war expenditure. Ordnance estimates were a very different matter. They included every sort of disbursement on forts, lands, barracks, land and sea munitions, besides men; and the absence of reliable statistics as to stocks and consumption must have made accuracy impossible. The figures can only have been guesswork, and as the Empire expanded they failed to make sufficient provision. Besides “ordinary” (peace) and “extraordinary” (war) there were “supplementary” estimates, often greater than the other two put together. But even so the Board of Ordnance could not pay its way and soon got hopelessly into debt. Even by 1714 it owed various persons for goods supplied or services rendered to the tune of over £71,000, the bills dating back to 1673. There were piteous appeals from creditors, but they were helpless. Neither the Board nor its constituent officers could be sued in a court of law. No redress was to be obtained and debts continued to pile up. The contractor received a debenture, giving particulars of the service he had rendered, signed by three members of the Board. Then he had to wait until the Ordnance Treasurer had sufficient funds in hand or else redeem his debenture at a heavy discount.

It will be obvious that such a process opened the door to abuse. In spite of the order abolishing poundage, fees were exacted on every possible occasion, even for the privilege of being chimney sweep at the Tower. A gratuity would be required before an order was placed,

another for getting goods examined and passed, and finally more before the contractor could get even a part of what was due to him, for bills were only paid by instalments. Fees were also exacted for entering gunners on the books and training them, for every new civilian entrant even if only a labourer, for delivering arms or ammunition to a regiment, and from the captains and gunners of ships of war for passing their accounts. The effect of this process on purchases by contract will be obvious. Quality, the business of the Surveyor General, was no more to be relied on than quantity, that of the Storekeeper.

Corporations have been notorious even in modern times for having neither a body to be kicked nor a soul to be saved; and, following the custom of the time, the officials feathered their own nests and left the work to underlings who copied their example. The main concern of the latter, with such an elaborate system of check and counter-check, would be to save their own skins and make sure there was no transaction for which they could not produce a properly vouched authority, rather than to see that forts, ships and troops were efficiently provided for. Nevertheless, and although military histories teem with instances of the scandalous way in which the Board of Ordnance attended to its public duties, it was probably as efficient a cog as any in the whole machinery of public service, when allowance is made for the prevailing corruption in public office.

In 1689 there were complaints that the pikes issued to the troops on service in Ireland were actually rotten, that the stocks of the firelocks were equally so, and that the cannon burst with small use, "being made of ill metal." In 1685 the magazines were so ill equipped that muskets, bullets and match had to be hurriedly obtained from Holland. Again in 1741 muskets had to be hastily purchased from abroad. With Scotland seething with rebellion, the Governor of Fort George writes that the parapet wants mending, and that there are no palisadoes; he entreats that he be sent a little gunpowder, spades, pickaxes and wheelbarrows; and that grenades be sent

fuzed, as no one understands the operation. At Dum-barton, it is reported that there are only four barrels of powder, and a deficiency of every kind of store ; most of the gun carriages are unserviceable, platforms want repairing, and there are only four gunners of whom three are superannuated. At Chester the Governor complains that there are guns, but no carriages. There is mention of palisadoes being better fitted for hen-coops than for fortifications. From Pendennis Castle it is reported that there are 46 guns in charge of a Master Gunner, ninety years old, with but one assistant. During the siege of Gibraltar in 1726-27 no less than 71 guns and 29 mortars burst, so badly had they been cast. It is safe to assume that matters were far worse abroad than at home where they were more under the eye of the authorities.

It was one of the duties of the Ordnance to provide and equip such barracks as existed. The scale of equipment for a company of 100 men in Ireland in 1753 reads as follows : 2 pair of bellows, 12 wooden dishes, 24 plates, 4 ladles, 36 trenchers, 6 drinking horns and 12 brown chamber pots, a meagre allowance. For beds, wooden platforms wide enough to hold a number of men were provided, but no bedding or blankets, though these were sometimes supplied in America. A Royal Warrant of 1726 authorized bedding for 398 men in Nova Scotia, detailing the items and quantities, viz. 220 flock beds and bolsters, 222 pairs of blankets, 200 coverlets and 440 pairs of sheets. What action the Board took to give effect to this order I do not know ; but at about the same time the Governor of one of our American colonies writes that the troops had received no fresh bedding for fifteen years, in consequence of which " many of the soldiers are very ill and in ye winter like to starve." Four years later he reports that " for want of bedding many of ye soldiers have since perished." In 1763 when, owing to the rigour of the climate, extra blankets were asked for at Quebec, the troops had to pay for them. At the siege of Fort St. John's on the River Richelieu in 1775, during the American War of Independence, there was neither bedding, straw, nor blankets ; the wretched condition

of the troops undermined their health, and contributed to the fall of the fortress.

The Board's dealings with infantry and cavalry, however, were almost solely confined to the issue of muskets and ammunition, and for the former a regular contract or indenture was entered into between the Board and the colonel; the latter undertaking to keep them in good order, to return them if required in the same condition and, in case of loss, to purchase from store a sufficient number to replace the deficiency. For example a Royal Warrant of 1725 directs the Master General to issue new muskets on payment to three regiments at Gibraltar, to replace others which are "old and much decayed." But there was no regular rule on this or other matters. Each transaction was the subject of a special Warrant. There is a record in 1743 of new arms being issued, when only the difference in value between the old and new was charged; and such concessions were granted more freely as time went on; arms and ammunition expended on service, in particular, being replaced free of charge.¹

In the case of small-arm ammunition, however, it seems to have been the custom to provide a fixed allowance for practice from a very early date, as shown by the following records. In 1689 to 21 companies, apparently quarterly, $10\frac{1}{2}$ barrels of powder, $10\frac{1}{4}$ match (perhaps fathoms) and 5 cwt. of musket shot; in Ireland in 1742 one barrel of watch powder per company, each half-year; and in 1752 again there is reference to $\frac{1}{2}$ barrel for watch ammunition. Further, two flints per musket per annum were allowed in Ireland.

Other articles supplied by the Ordnance were regimental drums and tentage for general purposes, though each regiment found its own camp equipment on service.

All these, however, were really accessory duties. The main work of the Board of Ordnance consisted in furnishing armaments for fortresses and ships and in providing a train for siege work in time of war, services which called for a growing assortment of implements and materials

¹ Examples of these Warrants, and the form of Indenture, will be found in Appendix IV.

besides guns and ammunition. Here also any new work would be sanctioned by Royal Warrant, but in matters of upkeep the Board exercised its own discretion. As there was no regular gun practice, maintenance costs would not normally be very heavy and in such questions of interior economy the Board checked expenditure by examining the accounts of its subsidiary depots and those of men-of-war when paid off.

The following depots are mentioned in addition to the Tower in the Warrant of 1683. The rates shown being the yearly salaries of the Storekeepers will give an idea of their relative importance :—

	£		£
Chatham	120	Woolwich	40
Portsmouth	120	Plymouth	40
Tilbury	100	Hull	40
Sheerness	80	Berwick	30
Upnor Castle	80	St. James Park	20
Windsor	50		

It will be seen that no depots are included for Ireland, which had its own establishment ; nor for Scotland, the strongholds of which, however, became a charge on the Ordnance Office upon the Act of Union in 1707. It will also be seen that Woolwich has a position very low down in the list. What is now the principal Arsenal of England is of considerably later birth than Woolwich Dockyard. It originated in the erection of batteries, in what was known as the Warren, in 1667, as a protection from the Dutch fleet that invaded the Thames. In 1681 butts for the proof of guns were built, and the Warren became the place for disposing of ship's guns, carriages and powder, a laboratory being set up to deal with the latter. The establishment then became known as the Tower Place, being an adjunct of the Tower.

In 1660 the manufacture of both brass and iron ordnance was a monopoly held by two individuals, and certainly a few years later there was only one establishment at Moorfields where brass guns were turned out by private enterprise. The creation of a gun factory at

Woolwich was apparently due to an accident which occurred at this foundry in 1716, when re-casting guns captured from the French by Marlborough, and was dealt with in the following minute of the Board of Ordnance: "16th June 1716. It having for many years been the opinion of the most experienced officers that the Government should have a Brass Foundry of their own, and whereas Mr. Bagley's Foundry is the only one for casting brass ordnance and liable to dangerous accidents which cannot be prevented. It is therefore ordered that a proposal and estimate be made for building a Royal Brass Foundry at His Majesty's Tower Place at Woolwich, and the charge thereof defrayed out of the £5,000 given this year by Parliament for re-casting brass ordnance, and that no time be lost herein, in as much as there are but two 12 prs. and not one 18 or 24 pr. for land service. A letter to Mr. Henry Lidybird to attend the Surveyor General the 20th about providing bricks for the Royal Brass Foundry at Woolwich." Next followed an advertisement in the *London Gazette*: "Whereas a Brass Foundry is now building at Woolwich for His Majesty's Service, all founders as are desirous to cast brass ordnance are to give in their proposals forthwith, upon such terms as are regulated by the Principal Officers of His Majesty's Ordnance, which may be seen at their Office in the Tower." Iron guns, however, continued to be supplied by contract.

The Laboratory seems to have become reduced to a small affair under a Bombardier, for when a Controller, Firemaster and other staff were appointed in 1746, the order says that by this means "the art of making fireworks for real use, as well as for triumph, may be again recovered." A factory for making gun carriages followed; and the existence of these establishments resulted in stocks being held both of the finished article and of the materials used in manufacture, and thus Woolwich became in time the principal depot outside of the Tower.

Gunpowder was made solely by contract until 1759, when the Ordnance established a powder-mill at Faversham, with a Storekeeper, Masterworker and Clerk of the

Cheque. In the same year a powder magazine which existed at Greenwich was taken down and re-erected at Purfleet.¹

These factories came into being because private firms were unable to provide a sufficiency of munitions in time of war. The desperate position of affairs as regards land service guns in 1716 is revealed by the Board minute quoted above; during Marlborough's campaigns all the mills in the country could barely keep him supplied with powder although, in time of peace, not enough was required to keep one mill going; on several occasions muskets had to be hurriedly purchased from abroad, and in 1726 the importation of sword blades from Germany free of duty was sanctioned, because sufficient were unobtainable at home. Nevertheless small arms continued to be provided solely by purchase.

Plymouth, Hull and Berwick were doubtless independent commands till the Office was consolidated in 1667. Although a magazine of arms at Plymouth existed as far back as the time of the Armada, its site was at Mount Wise. The present depot, with its picturesque buildings, was built between 1718 and 1725 by the famous architect of Blenheim Palace, Sir John Vanborough, who held a post in the Ordnance.

With the expansion of the Empire many fresh depots were created, especially abroad; for every expedition was accompanied by a Field Train and Store Department, improvised for the occasion, resulting in the establishment of a new depot if troops remained and forts and barracks were built.² Leaving out of account Calais, long since ceded to France, the first foreign depot was at

¹ Anno 33, Geo. II, Cap. XI. "An Act for taking down and removing the Magazine for Gunpowder, and all Buildings thereto belonging, situate near Greenwich, in the County of Kent, and erecting instead thereof a new Magazine for gunpowder at Purfleet near the river Thames, etc." The Act begins by reciting that the Powder Magazine near the Town of Greenwich in the County of Kent is very improperly and dangerously situated and notwithstanding great care has been taken to support the said magazine, the same is utterly incapable of being effectually repaired.

² The immense expansion can be gauged by comparing the number of depots in 1683 with those given in Appendix VI for the year 1796.

Tangier, where we were continually at war with the Moors until it was evacuated in 1684; the next at Gibraltar, captured in 1704. Minorca, Annapolis in Nova Scotia and Placentia in Newfoundland became Ordnance stations by the peace of Utrecht in 1713, being followed by many others in North America and the West Indies. But with India the Board of Ordnance had no concern beyond buying saltpetre from the East India Company and selling to it munitions. John Company had its own armies and artillery and its own arsenals, as it called its depots.

At home the order that nothing should be issued or taken in except by an order from the Tower seems to have been rigidly observed. Stores accumulated perhaps as war surpluses or as ships paid off, when the Board might direct them to be retained. If anything over and above was wanted a letter was addressed to London when the Board would prepare a "proportion" based on what it could spare and thought fit to approve. An exception, however, existed in the case of expendable materials for the maintenance of fortress equipments. These were demanded periodically and, on receipt of the account showing what had been expended, a covering "proportion" would be prepared for approval at a Board meeting.

But this extreme centralization would have brought work of any sort to a standstill when colonies were acquired and there the Ordnance representatives were allowed more latitude. Besides the Storekeeper in administrative charge, there were Clerks of the Cheque to deal with finance and cash and Clerks of the Survey as technical experts. These were styled the Respective Officers, corresponding in a minor degree to the Principal Storekeeper, Clerk of the Ordnance and Surveyor General at the Tower. As a miniature Board, a trinity of officials each serving as a check on the others, the Respective Officers were allowed to settle routine questions under the orders of the Governor on the spot, or even important ones in time of urgency, reporting their action to London. Being recruited from the staff at head-

quarters they no doubt knew what it was within their discretion to do and what would excite comment. At the smaller stations, however, there was only a Storekeeper who combined all the functions in himself.

During the period covered by this chapter, the present Corps of Royal Engineers was represented solely by officers ; the artisans being all civilians. In 1667, when Ordnance services were consolidated under one Master General in London, there were but 60 gunners scattered about the kingdom. Artillery was only born as a regiment in 1715, when two companies of gunners were created. Two battalions were formed in 1757 and thence onwards there was much expansion, especially towards the end of the eighteenth century when guns were first employed as an independent arm in the field.

Originally there was no distinction between the Ordnance soldier and Ordnance civilian ; and though, with the passage of time, the tendency was to differentiate between them, the tie between the civil and military elements serving under, and represented in Parliament by, the Master General remained much closer than that between the gunners and sappers and the army proper, cavalry and infantry.

Thus these two Ordnance Corps, as they were styled, had a very different mode of origin and were nurtured on a very different set of traditions from the army, whose ancestors were mercenaries with leaders dependent on their wits for a livelihood. It was this that led to the barter in commissions, a tap-root of the vicious system of administration whereby our army was for so long cursed ; so that it was common to find a grey-headed and experienced captain serving under a youthful sprig of nobility who looked to his off-reckonings, warrant men, patronage and other more illegal perquisites to recoup the price of his colonelcy.

In the Ordnance Corps promotion went by seniority, at any rate in principle ; and purchase with its ill-omened satellites was unknown. Unquestionably there were irregularities, following the custom of the age, and

undoubtedly non-existent men were borne on the books, but there were never the gross scandals that disgraced the army.

The Board of Ordnance settled the emoluments of its soldiers and clothed and equipped them by means of centralized contracts, following fairly closely the scales and patterns established for the line. After inspection at the Tower, supplies for these two Corps were distributed, much as at present, through the medium of Ordnance depots. Off-reckonings were unknown and officers had neither the opportunity nor the incentive to sweat an income from the backs of their men by furnishing shoddy or insufficient clothing. Indeed the men were well paid and well treated in comparison with those of the army and received certain concessions such as free rations on board ship, so that there was often jealousy between the two services.

CHAPTER VI

DETAILS OF UNIFORM, EQUIPMENT AND ARMS

AT the Restoration the terms cassock and doublet disappear from the dictionary of the soldier's dress, being replaced by the coat and waistcoat. The former was worn much longer, almost to the knee ; it had a full skirt with ample pockets and cuffs and was still quite plain except for a binding or facing round the edge. The latter was really the doublet under another name, an undercoat with sleeves, coming well below the waist. In fact the soldier's clothing still followed the fashion of the time. It was commodious and comfortable, he wore the type of garment in which our forefathers would have gone shooting or hunting, and in this sense the modern service dress may be said to be a wise reversion to type, rather than an innovation.

The coat was at first worn open, but shortly before the reign of James II it buttoned up ; and the infantryman's dress was completed by breeches, gartered stockings and shoes. The linen collar was replaced by a cravat or neckcloth ; and scarves—or sashes to give them their modern name—were, at any rate in some regiments, worn by all ranks. But sashes were no longer so necessary to distinguish friend from foe, and were soon dispensed with, first for musketeers and next for pikemen, remaining only for officers and sergeants. They were at first worn over the shoulder, and next round the waist ; this change being probably due to the buttoning up of the coat, for later when it was worn open once more the officer's sash reverted to the shoulder. The broad-brimmed felt hat was rather lower in the crown than in Cromwell's days, and was decorated with ribbon. It soon became the custom to cock up first one side, next the other, and finally the back ; so that it became a three-cocked hat like that still worn by the Chelsea Pensioner.

The infantry colour was usually red, but by no means universally so as in Cromwell's time. Of the regiments

raised in the reign of William and Mary more had blue coats than red. One regiment, now the Marines, was in yellow ; and some in grey with facings of various colours. One nobleman gave his men black facings with little black flags because he happened to be in mourning for his mother when it was raised. In 1698, however, the wearing of scarlet or any red cloth or stuff as a livery was made illegal except for His Majesty's servants and Guards (troops), those belonging to the Royal Family and foreign ministers ; and a Royal Warrant of 1708 directs that men in Flanders are to have red coats with black buttons and button-holes, perhaps to distinguish them from the French. The result was to establish red definitely as the distinctive colour of the British Army.

The cavalryman's coat was much the same as that of the infantry, only finer ; and, like his hat, was often decorated with gold or silver lace. He wore stiff black leather boots, leather breeches and doublet, and on service the buff coats of Cromwellian days were to be seen. These being extremely durable, were probably only discarded as they wore out ; and in the same way leather doublets were in time replaced by cheaper cloth waistcoats. Cavalry were also provided with cloaks, usually red, with a cape or collar that could be turned up in wet weather, and carried rolled behind the saddle. Iron headpieces or skull caps to serve as protective hat linings were worn on occasions on service as were backs and breasts, which were even revived for pikemen ; but as time went on they were employed less and less. Eventually the last relic of armour was the gorget carried by the officer slung round the neck, as an ornament, by a coloured ribbon. The dragoon was clothed much like the infantryman except that he wore half-boots in place of shoes.

As in dress so in equipment, there was no exact uniformity. The usual arms of the cavalry were the sword, carbine and a pair of pistols ; and of the dragoon much the same. The carbine usually rested with its butt in a bucket on the right of the saddle, or was sometimes slung from the shoulder. The sword, still carried both by foot and horse, hung either from the waist or shoulder,

the former being the more frequent mode. The belts were very wide and substantial, either of buff or tanned leather which was cheaper.

Dress, at first plain as in Cromwell's time, very soon became more decorative, one of the first steps being the provision of special colours to distinguish the pikeman. At a review in Hyde Park in 1669 the first or King's regiment were in red coats turned up with light blue, but the pikemen had coats of silver with light blue facings. The second had red coats with green facings, the pikemen being in green faced with red. This reversal of the colours in the case of pikemen was common and also employed for drummers, who wore a very resplendent uniform with a curious appendage in the shape of a loose embroidered hanging sleeve.

In the time of James II, however, the grenadier replaced the pikeman as the picked man. Each regiment was given a grenadier company in 1678, and later there were troops of horse and dragoon grenadiers as well. The special duty of the grenadier was to lead the assault, throw grenades and hew down palisades or other obstacles. The tallest and strongest were selected and they were specially clothed and equipped, being distinguished by lace loopings at the button-holes, often parti-coloured and ending in a tuft. Evelyn, describing a review of 1678, records in his diary "now were brought into service a new sort of soldier called grenadiers who were dextrous in flinging hand grenades, every man having a pouch full. They had furr'd caps with coped crowns like Janizeries which made them look very fierce, and some had long hoods hanging down behind as we picture fools. Their clothing being likewise pie-bald, yellow and red." There is also a record of the purchase in 1678 of 70 "cravats of fox tails" at 3s. 6d. with ribbon for grenadiers of the Coldstream Guards.

Like so many others the uniform was of foreign extraction. The motley colours and fur cravats did not endure; but the cap remained, and being the ancestor of the modern bearskin, merits a description. It was an Eastern head-dress, a fur cap the crown of which was

formed by a long pointed red bag falling over the back or side of the head and ending in a tassel level with the shoulder. Soon the fur was replaced by cloth, usually red, with the base turned up before and behind. Next the hood was curtailed, until the cap became cone-shaped with the tassel at its apex. It was then furnished with emblems and devices in front and a grenade on a coloured patch behind, becoming the handsome mitre cap which it was the grenadier's distinction to wear for many years to come ; but which bore little resemblance to the fur cap from which it was evolved. Horse grenadiers had hats as well as caps, only donning the latter at the word of command to throw grenades ; and it is evident that they were intended to make the man appear taller and more ferocious in the assault. Their shape also enabled the musket to be slung over the shoulder more easily than was the case with the cocked hat, which might be knocked off during the process. Grenadier companies had no pikes, the men were all armed with musket and sword.¹



Wooden effigy of a Grenadier,
2nd Queens

The grenade came greatly to the fore at this time. It was a hollow iron sphere, one or two inches in diameter, filled with powder, into the touch-hole of which was inserted a slow-burning fuze of fine powder and charcoal dust. Sometimes it was made of pasteboard or wood for incendiary effect. Grenades were carried in a brown

¹ The horse grenadier survived till 1839 when the Horse Grenadier Guards ceased to exist. But, of course, he had long ceased to carry grenades.

leather pouch slung to a shoulder belt, and the match used to light the fuze was contained in a tube perforated with holes to conceal the light and fixed on the belt.

The grenadier also carried a hatchet to clear away obstacles.

The musket with its accessories was immensely improved at this time. The flint-lock, originally supplied to special companies, was provided for entire regiments, those first armed with it being called Fusiliers, their weapon being styled a fusil after the Spanish word *focile*, a flint. These regiments were distinguished by caps, similar to those of the grenadier, only shorter and without the ornament of a grenade. The fact that they were composed entirely of musketeers and had no pikes shows that the firearm was more and more assuming the first place among weapons. Even the officers in these regiments, and those of grenadier companies, carried a fusil in place of the half-pike or *esponton* borne by others as a mark of distinction; this being an ancient and honourable weapon like the halberd of the sergeant. The manufacture of flints became quite an important industry, the Board of Ordnance needing enormous numbers, as their life was only about one hundred rounds.¹

The next step was the abolition of the bandolier. It has been said that this was a source of danger, besides which it was awkward and cumbersome to carry, being apt to get entangled in undergrowth. It was noisy and jangled, giving away the position of troops; and the powder was apt to be spilt when the charge was emptied into the musket. With the bandolier the charge had to be inserted and rammed home with a wad of paper, tow,

¹ The industry was confined to the village of Brandon, on the borders of Suffolk and Norfolk, where it actually survives to this day for primitive weapons in out-of-the-way parts of the world, though flint-knapping is a moribund trade. We captured many flint-lock muskets at Baghdad during the Great War, and there is no flint to be found in Iraq. Doughty, in *Arabia Deserta*, invariably refers to the desert Arabs employing the even more primitive slow match as the means of ignition, presumably because flints were unobtainable. An interesting account of Brandon's special industry is given in *Blackwood*, April 1927.

horsehair or more commonly grass, and next the same process had to be gone through with the bullet. These operations were likely to be done carelessly or forgotten altogether when, if the muzzle was not kept elevated, the ball would be dislodged and lose its velocity or might even roll out of the muzzle. The bandolier was now replaced by a cartridge, a cylinder of stiff paper divided into two compartments by a wad and with both ends closed. One contained the charge, the other the bullet, and the soldier bit off the end of the former before loading. The result was that there was only one operation of loading and ramming, no chance of the bullet becoming displaced and an increased rate of fire; though missfires were still frequent. Another advantage was that the musket could be slung over the shoulder, which was difficult with the bandolier. Slings were at first of stout brown leather four inches wide, but were later reduced to about their present dimensions. Cartridges were contained in a stiff tin-lined leather box, the infantry pouch being supported by a wide belt passing over the left shoulder.

The third great improvement was the invention of the bayonet. Regiments were still composed of two muskets to one pike, the former being the weapon of offence and the latter that of defence. The musketeer and pikeman were complementary, either was helpless without the other. One or other was always out of action, and when charged by cavalry, a hollow square of pikemen was formed with the musketeers inside. Many expedients were tried to enable the musketeer to defend himself, such as combinations of pike and musket, portable *chevaux de frise* and spears, or swinefeathers as they were called, which he planted in the ground after the manner of the archer's stake. The vogue of the grenade was doubtless due to the same want, for it was little used after the advent of the bayonet.¹

The word is supposed to be derived from La Bayonette,

¹ The grenade cannot be said ever to have entirely disappeared before it was revived in the Great War. It continued to be employed on occasions for the attack or defence of fortified places.

a spur of the mountain of La Rhune in the Pyrenees, over which Wellington's troops fought their way in the Peninsular War ; and which in turn derives its appellation from the town of Bayonne. It is said that during a scrap between Basques and Spaniards on this spur the Basques, running short of ammunition, stuck the hilts of their daggers into their guns. Certainly in its earliest form the bayonet was simply a hunting knife with a wooden plug handle which was jammed into the muzzle of the musket.¹ This method of fixing made it impossible to fire the piece ; so the next idea was to fasten the knife round the barrel by two rings. But barrels were by no means of the same exact circumference, so that misfits occurred unless the same knife and musket were always used together. Finally the knife, which in the meantime had grown longer, was attached to a socket at the side of the muzzle, and thus was evolved the bayonet, carried both on horse and foot in an attachment to the sword belt, the weapon for which the British Army became as renowned as for the bow at an earlier age.

All these changes were accomplished by the beginning of the eighteenth century, the invention of the bayonet being by far the most important. The pike and grenade ceased to be carried, and though regiments kept their grenadier company with its distinctive uniform, it was armed and equipped like the rest.

While the bayonet was introduced for defensive action, as a substitute for the pike, its value to a man armed with a musket, still of slow and uncertain action and of a very

¹ The Public Record Office contains the following particulars of the Ordnance Office :

" 14th March, 1662. Ordered that the french pikes and ye short swords or Byonettes that lately were recd from Dunkirk be surveyed and an accompt presented to the office of their defects to ye end a Contract may bee made for their speedy repaire.

" 17th March, 1662. Ordered yt ye Byonettes lately recd from Dunkirk be issued to the psons foll to be by them made clean and repaired and returned within 10 daies space att 14d apce.

Joseph Awdeley.	200.
Samuel Law.	200.
Robert Steadman.	100."

limited range, was quickly appreciated ; and the infantry assault became the true end of every fight. In fact infantry, now armed with a weapon combining fire effect with that of cold steel, definitely established its supremacy as the chief fighting arm. Nevertheless cavalry and dragoons, who were kept close at hand, still often decided the issue of battle at this time, especially in rainy weather when the musket constantly missfired.

This stage lasted till towards the middle of the nineteenth century, when the invention of an accurate long-range rifle made the assault increasingly difficult. The bayonet then tended to revert to its original rôle of a defensive weapon, and decisions were often gained by fire action alone.

At the time of which we are now treating the musket was practically the same as that with which we fought at Waterloo, save for minor modifications. In the time of Cromwell the barrel had been browned or "russeted," but now it was polished for the sake of display. A half-cocking arrangement was incorporated in the lock, so that the weapon could be carried loaded with safety ; and a steel ramrod replaced the wooden one about the year 1725. But it shows how slowly such improvements were adopted when the regiment had to pay, that fifty years later many wooden ramrods were still in use and in the stores of the Ordnance. Wooden or bone snappers or hammer-stalls were provided regimentally to save the flints from getting worn when practising the firing exercise, and canvas covers to preserve the lock and priming, mainly in the cavalry.

It had been customary for the bandolier to be supplied as a component of the musket by the Ordnance, the sword being provided by the colonel ; but the colonel was now saddled with the expense of finding the cartridge pouch with its furniture as well. Regiments could purchase these from the Ordnance, but more often obtained them elsewhere, cheaper and of poor quality, so that there was no standard size or pattern.

Changes in artillery equipment were not so important.

The train of loose powder laid down the vent was enclosed in a reed or tube of some material such as paper, zinc, tin or pewter. This would be safer, increase the rate of fire and tend to lessen erosion of the vent.

Guns had by now differentiated into three main types. The cannon proper was a heavy casting, stout enough to withstand the shock of firing a solid projectile, and was fired point blank. The mortar was very short and squat, of large calibre but with a thinner wall. It was mounted on a fixed bed at a constant elevation of about 45 degrees, and was used solely for indirect fire, its range being regulated by the amount of the charge which was always small. The howitzer, also used for indirect fire, was the latest arrival. It came midway between the cannon and mortar, had a variable elevation and, like the cannon, was mounted on wheels.

Bombs—hollow spheres filled with powder—were only fired from mortars or howitzers. It was considered impossible that the wall of the shell could be sufficiently strong to withstand the shock of discharge from cannon proper, and at the same time weak enough to be disrupted by the explosion of its contents. These bombs were sometimes made to annoy the enemy by their smoke and stink, thus anticipating the use of smoke and poison gas in modern warfare. "We have a way of preparing balls, which during their combustion cast forth a noise-some smoke, and that in such abundance that it is impossible to bear it."¹ The fuze was like that of the grenade, a piece of slow match; and the shell was placed in the bore with the fuze towards the muzzle. Although the projectile was such a loose fit, it was not realized that the flame from the charge would pass round the shell and ignite the fuze, which was set alight by hand just before the piece was fired; and it was probably not till about the middle of the eighteenth century that this practice disappeared.

By that time also the piece of slow match used as a fuze was enclosed in a wooden sheath, adjusted for time of burning either by cutting to length or by extracting a

¹ *The Great Art of Artillery*, Simienowicz, printed at London, 1729.

portion of the contents. The bomb was intended to burst on impact, but with this rough-and-ready type of fuze it might lie on the ground for an appreciable time ; so that it was not impossible for the enemy, with a certain amount of risk, to render the shell harmless by pulling out the fuze or plunging the shell into a bucket of water ; or he might remove himself from its vicinity. Real percussion fuzes that would act on impact were attempted, but never came into practical use. With a round shell that might strike with any part foremost the problem was then beyond solution.¹

All this time the soldier's dress was becoming more and more decorative. The *Weekly Journal* of 1718 records that "Colonel Crosby has ordered that every private soldier in his regiment of foot shall wear ruffles at the bosoms and sleeves of their shirts, a custom never known before in England." Uniform in fact was still far less the livery of the Crown than of the colonel, whose badge it was that was worn—a survival of feudal custom. Apart from the coat being red, there was little uniformity between regiments. To lace at the button-holes were added wings at the shoulder, especially for the grenadier. Not only was the coat open, but it developed a lapel at the breast and the skirt was looped back before and behind for convenience in marching, giving opportunity for the display of contrasts in colour for facings and linings, waistcoats and breeches, which were of great variety of hue. And still further to increase the pictorial effect dummy buttons and lace were added. Cavalry breeches were usually of shag, a cloth with a velvet nap

¹ *The Great Art of Artillery* describes a percussion fuze for hand grenades as follows : "Then light your match as soon as it has acquired a good coal, put it into the fuze with its bullet downwards, and throw the grenade where you think fit, and be assured that as soon as it strikes against the ground the leaden bullet and its match will fall down into the fuze, and by lighting the meal powder in the side holes of it, it will fire the grenade, and split it into a thousand pieces." Obviously this plan would not do for a shell fired mechanically where the shock of discharge would have put the fuze into action, and the same work describes a much more elaborate affair intended to overcome this difficulty.

like plush and probably similar to the green velveteen coats still worn by the Royal Foresters at Windsor. Stockings were at this time worn very long, rolled over the breeches half-way up the thigh, but soon after the beginning of the century were replaced by spat gaiters, equally long, of white cloth with buttons and garters.

At this time, too, an entirely new type of uniform began to figure in the British Army—four companies of Highlanders raised in 1725 wearing the national dress. The main feature of this was the voluminous tartan plaid which enveloped the whole body down to the knees and also served as a blanket. This was confined to the body by a belt from which hung a purse or sporran to act as a pocket. The bonnet of homespun, decorated with a feather, was a serviceable head-dress, and the same material, stitched together in the shape of the leg, served as stockings. Home-made brogues of untanned deerskin were worn on the foot. But though the Highland garb was adopted in deference to national sentiment, the Government by no means approved of the Royal Stewart, or, indeed, any particular clan tartan, being worn. The colours selected were those of the groundwork of the Campbell tartan, shorn of the coloured lines that denoted its different septs, and it was this sombre residue—black and dark green—that earned these troops the title of the Black Watch.

Towards the middle of the century a new sartorial era dawned, that of the official military tailor; the result being not only to establish much greater uniformity between regiments, but also, for the first time, to create an entire divergence in costume between the soldier and civilian. Hitherto, apart from armour and armoured clothing, there had been no particular distinction in appearance between the two, the soldier's coat and hat being modelled on the prevailing fashion.

It was Frederick William of Prussia, the half-crazy genius who ransacked Europe for giants to form his grenadier guard at Potsdam, who started the craze for military tailoring. He insisted on the utmost precision

in uniform in his army down to the minutest details ; but there was method in his madness. With precision in dress and deportment, he coupled precision in drill and movement and an iron discipline, converting his soldiers into automata ; a homogeneous body without individualism, guided on the battlefield, as on the drill ground, solely



by the word of command. In fact, he employed uniformity psychologically to create a sense of mass discipline.

In this he succeeded, but others, noting his success, were deluded into the idea that a precise exactitude was the object to be achieved rather than a means to an end. George II, who sat on the throne at this time, slavishly copied his cousin of Prussia ; his interest in his army developing into a passion for lace, cockades and such minutiae ; in which efforts he was ably seconded by his son, the Duke of Cumberland, who first saw service in

Germany. Walpole writes of the Duke, who, however, was certainly not an incompetent soldier, that "he was as angry at an officer's infringing the minutest precept of the military rubric as at his deserting his post, and was as intent on establishing the form of spatterdashes and cockades as on taking a town or securing an advantageous situation."

It was an unfortunate hour for the soldier when this vogue came in. His coat became tighter, which was not in the interest of either health or comfort; and his energies were expended upon pipeclay, polish and a formal and inelastic drill. It is, in fact, only of quite recent years that elaborate parade evolutions have gone out of fashion, and that the soldier has been encouraged to display individualism and initiative.

Before this, though wigs were sometimes to be seen in the army, the soldier usually wore his own hair as he pleased; but now wigs were discouraged, except for those who could not grow their hair long enough to suit the prevailing style, which was to powder and gather it in behind. Later, hairdressing was carried to absurd lengths; each company had its barber who shaved the men and powdered their hair, doing no other duty; and regiments even kept a block in the orderly room showing how the curls were to be arranged. The style of hairdressing, the fashion of lace and buttons, pipeclay, polish, a meticulous precision in details of dress and especially in the cock of the hat, came to be regarded by many as matters transcending all others in importance. A regimental order of the Coldstream Guards reflects this tendency: "the men to appear perfectly clean and shaved, square-toed shoes and gaiters, their hats well cocked and worn low so as to cover their foreheads, and raised behind with their hair tucked well under and powdered, but none on their shoulders; the point of their hats pointing a little to the left with cockades under the loops as usual."

It was this attention to details that resulted in the modern salute; witness the following regimental order of the Royal Scots in 1762: "As nothing disfigures the

hats or dirties the lace more than taking off the hats, the men for the future are only to raise the back of their hands to them with a brisk motion when they pass an officer. When at any time they have occasion to take off their hats entirely, it must be with great care. If any of the new hats which the men will receive very soon appear to be disfigured or soiled by a dirty hand in any course of time, the lace to be washed and the hat new dressed, and the expense to be charged to the man it belongs to as a punishment for his want of care."¹

There were numerous petty edicts about this time establishing details of dress; the grenadier's match-case became an ornament to the pouch belt, all the hats of the army were to be cocked like those of the first regiment of foot, breeches in the line were to be made to button and tie at the knee, and garters were to be cut off one inch from the buckle with the ends turned in. Orders of this sort not infrequently led to outbreaks and even mutiny owing to the time, trouble and expense to which the man was put to turn himself out to the satisfaction of his officers. The soldier's meagre subsistence suffered; for he had to pay for the pipeclay, cleaning materials and brushes which were now necessary, for the combs, grease and flour with which his hair was dressed, and the ribbon with which it was tied; or if his hat was to be cocked in a new manner.

One result of these efforts was that in 1742 a set of descriptive plates of regimental uniforms was published, which shows that, with the exception of the Horse Guards and artillery, who wore blue faced with red, every regiment was clad in red coats.

A consolidated dress regulation followed in 1751 giving elaborate details of the dress of the various Corps; but

¹ The Guardsman, when in fatigue dress, still salutes by taking off his cap. In its origin the custom probably implied trust. Thus, when two knights met they would doff their casques or raise their visors, putting themselves in each other's power. In the same way the lowering of the sword in the officer's salute, the pointing of the rifle to the sky in the present arms, the emptying of firearms in the *feu-de-joie* and of cannon in the artillery salute all imply confidence and submission.

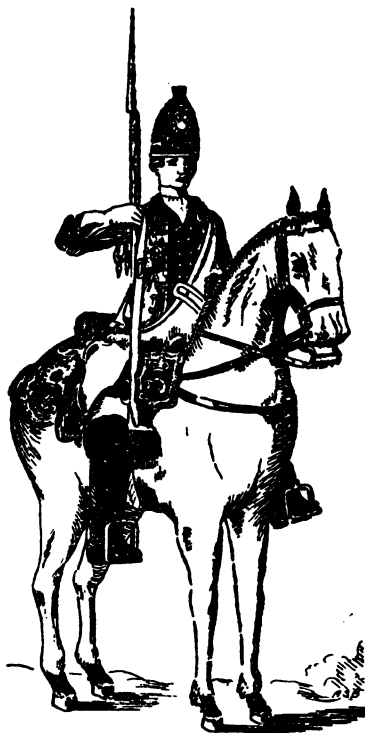
126 RESTORATION TO IND. OF AMERICA

these it would be out of place to describe here, for are they not recorded in the books of the chronicles of the regiments affected, to whom they are of chief interest?

Certain matters of general application, however, are worth mention. No colonel was to put his arms, crest, device or livery on any part of the appointments of his regiment, neither was he to allow any alteration to pattern



Private of King's Own Regiment of Foot—1742



Trooper Royal North British Dragoons—1742

without the approval of His Majesty or his Captain General. In crack regiments, however, which prided themselves on a smart turnout, this order was honoured more in the breach than in the observance. Officers continued to add such embellishments to the regimental uniform as their taste or tradition dictated. Infantry officers were to wear crimson sashes over the right

shoulder, sergeants sashes of worsted round the waist, cavalry officers' sashes were to be carried over the left shoulder. The front of the grenadier's cap was to be of the colour of the facing, but the grenadiers of Highland regiments wore the older and more barbaric fur cap, and the Royal North British Dragoons (now the Scots Greys) a similar type of headgear.

The coat was not only tighter but it no longer met in front, and the waistcoat was laced, each regiment having its own distinctive embroidery, with extra for the grenadier. In the cavalry there were precise instructions as to lapels. The Horse were to have them of the full length of the coat, dragoon guards only to the waist, other dragoons none at all.

The year 1768 witnessed the publication of another long dress regulation. A new style of infantryman's coat was introduced, in which there was a great saving both in material and lace. This was much scantier and more cut away, the tails being reduced in width and permanently turned back. Lapels, now nothing more than dummy ornaments, consisted of a strip of embroidered material up the edge of the coat. Cuffs were greatly contracted and the waistcoat was shorter and bore no lace. With this new style of garment the waist-belt was placed under the coat. At the same time the handsome and historic mitre cap disappeared; grenadiers and fusiliers being given a pointed bearskin, a reversion to type. In this the devices were borne on a metal plate at the base, that of the grenadier being also decorated with a grenade on the back. Officers wore an epaulette on one shoulder or the other, and in grenadier companies on both; though the sash, which it was first intended to keep in place, was now once more universally round the waist.

In this warrant, also, the colours of waistcoats, breeches and linings were standardized. They were to be either yellow or white, according to whether the officers wore gold or silver lace; and in the same way accoutrements and buckles were to be either buff coloured and of brass, or pipeclayed and of white metal.

The fashion of cocking hats never remained for long exactly the same ; but now it was undergoing considerable modification. The three-cornered hat was becoming flattened out, and developing into a double cock in front and behind. This was not so serviceable, less protection being afforded. By now regiments had been given distinguishing numbers, which led to much heart-burning over the order of precedence, but the custom of calling



Private, Grenadier
Company, Royal
Scots, 1768

them by the colonel's name continued for some time longer, and the numbers were only placed on the regimental buttons in 1767, though worn on grenadiers' caps before then. Swords had fallen into disuse in the infantry when the bayonet was introduced ; but in the reign of George I were again revived. This was nothing but a piece of military pedantry for they were of no real use ; and in 1763 they were finally abolished except for grenadiers, sergeants and musicians, who kept them more as a distinction than anything else ; each having its own pattern, which differed according to the fancy of the regiment.

It is refreshing to turn from these bagatelles to matters of more serious import to the soldier's welfare, few though they be. A sensible change that seems to have taken place spontaneously, about the year 1750, was the replacement of white gaiters, first by brown, and next by black—at first only worn in undress. This was a boon to the soldier who had much trouble in keeping his white gaiters clean, and was apt to contract rheumatism from the damp pipeclay. It is less satisfactory to record that linen replaced cloth as the material from which they were made. An order in 1749 directs that the infantryman's shoes are to have high quarters ; another in 1761 that they are to be much broader and stockings white.

Evidently there had been trouble with the men's feet. It is difficult to conceive how they can have marched in their low-quartered shoes, little more than slippers with a high tongue in front ; so that the foot must have been lifted out of the heel every time a step was taken if there was any mud ; and sores would be aggravated by the soldier's heavy burden. The following is the weight recorded as carried by a grenadier in 1762 :—

	lbs.	ozs.
Coat	5	2
(Presumably a watch coat, a certain number of which were provided for sentry-go or other rough work.)		
Firelock and sling	11	0
Knapsack with 2 shirts, 2 stocks, 2 pr. stockings, 1 pr. summer breeches, 1 pr. shoes, brushes and black ball	7	10
Other items and 6 days' provisions	39	7
	<hr/> 63	<hr/> 3

The equipment of both man and horse was still very cumbersome. The saddle was heavy, its appointments very substantial, belts wide with huge buckles ; and besides the above the soldier had to carry any other belongings he might possess, for there was no regimental transport in which to pack spare kit.

It was this that led to the appearance of Light Infantry. So long as we were fighting on the Continent with opponents similarly equipped who manœuvred, like ourselves, in dense formation with rigid parade movements, matters would be well enough ; but this form of warfare proved useless in America, with its broken and densely wooded country, against the French and their Indian allies, who were used to fighting unencumbered, to ambush and surprise attack. Light Infantry were first improvised for service in Canada in 1756, when the sleeves were removed from a number of the men's coats and fitted to their waistcoats, the coats, which were dispensed with except on parade, being provided with wings to hide the gap. The waistcoats were furnished

130 RESTORATION TO IND. OF AMERICA

with leather pockets to hold bullets and a powder horn was carried; the heavy accoutrements were dispensed with and the men could traverse the rugged country at their ease. The cocked hats were converted into caps with ear and chin flaps—a wise precaution against frost bite, and probably the first occasion, since the white surcoat of the Crusader, when a special article of dress was adopted for climatic reasons.

Although I have been unable to confirm the fact by



Light Trooper 11th Hussars

documentary evidence, I think regimental pioneers must have been born officially on the same occasion. This party marched in front, carrying a few handy tools to clear a road for the main body. To blaze a trail would have been very necessary in the backwoods of America and the pioneer at the date of his abolition after the Crimea wore a beard, a custom more likely to have originated in America than elsewhere, on account of the climate. The term, however, is much older, for Shakespeare in

Henry V speaks of pioneers working in the mines during the siege of Harfleur.

Light Cavalry came into being about the same time. The old distinction between horse and dragoon had practically disappeared ; both were armed and equipped alike and fulfilled the same rôle. In fact, in 1746, three regiments of the former were converted into the latter (probably for the sake of economy, the rate of pay being lower), and as compensation were given the title of Dragoon Guards. In 1756 each regiment of dragoons was given a light troop of active lads on light horses. The uniform was the same except for light jockey boots, and a jacked leather cap with ornamental front and a leather flap that could be lowered round the neck in bad weather. What was termed a light jockey saddle was provided ; a pouch to hold 24 rounds ; a holster on the right of the saddle, and on the left a churn—an open-mouthed black leather cylinder which held a spade, felling axe, woodman's bill and picket, so that the man could be independent ; the arms being sword, carbine, bayonet and pistol.

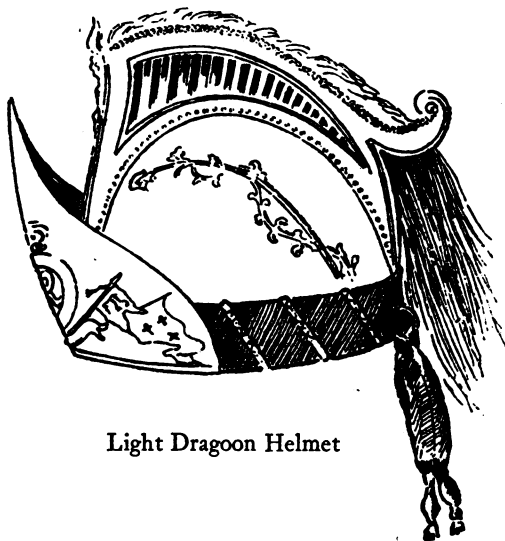
Soon afterwards these troops were replaced by light dragoon regiments ; when the leather cap was superseded by a metal helmet, a handsome head-dress with a crest, and the folds of a turban wrapped round its base instead of a leather flap.

All this time the soldier was provided with nothing beyond his clothing and necessities, accoutrements and saddlery, arms and ammunition, unless when encamped either in England or on service. On the former occasions the Ordnance provided tentage and sometimes blankets, the regiment finding everything else ; and on the latter camp equipment was charged to army extraordinary war expenditure. The Secretary-at-War then instructed the colonel who, usually through his agent, employed his own tradesmen to find what was necessary, the cost being refunded through the regimental accounts. The regiment was allowed to provide for its full establishment, regardless of strength ; and no accounts were kept of the

132 RESTORATION TO IND. OF AMERICA

equipment, which was disposed of regimentally when no longer needed, a fresh set being bought for the next war.

Water bottles and knapsacks had come into use during the Commonwealth and haversacks appeared very soon after, all three being treated as camp necessities. The water bottle was of stone or tin, but was later replaced by the canteen, a small wooden barrel. The knapsack was of leather with the hair left on, and bore the regi-



Light Dragoon Helmet

mental device ; the haversack, a cheaper article, being originally no doubt a cornsack, hafer being the German for oats. There was, however, no established method of carriage, nor any attempt to standardize scales or patterns of camp equipment.

That purchased by an infantry regiment of nine companies, each of 50 men, for service in America in 1764, reads as follows :—

	Price each		
	£	s.	d.
11 Bell tents (one per company, one for standards and one for rear-guard)	2	10	0
10 Camp colours and cases (one per company and one for head-quarters)	12	6	

UNIFORM, EQUIPMENT AND ARMS 133

	Price each		
	£	s.	d.
9 Drum cases (one per company)	9	0	
108 Hand hatchets (twelve per company)	1	8	
108 Copper kettles with bags (twelve per company)	13	6	
450 Canteens strung (one per man)	1	1	
450 Haversacks (one per man)	1	0	
450 Knapsacks (one per man)	2	6	
9 Powder bags (one per company)	6	0	

The bell tents or "Bells of Arms" were for the accommodation of arms, and were highly decorated, the style of decoration being laid down.¹ In this instance there is no mention of tentage for the troops, but where such was needed small ridge-pole tents to hold six men were employed, one camp-kettle per tent being the usual allowance. Cavalry required considerably more in the way of equipment for horse lines, picketing gear and so forth, including an article called a water-deck or oil-deck—a painted piece of canvas, usually bearing the title of the regiment and sufficiently large to cover the saddle, bridle, girths, etc.—in fact, the equivalent of the modern saddle cover.

Artillery, of course, formed an exception, being administered on quite different principles. The Board of Ordnance found any camp equipment or other stores that might be specially required in time of war by the Ordnance Corps, through the medium of the Field Train.

¹ The Warrant of 1751 reads: "The front or forepart of the Drums to be painted with the colour of the facing of the regiment, with the King's Cypher and Crown, and the number of the Regiment under it. The Bells of Arms to be painted in the same manner."

CHAPTER VII

THE BOARD OF GENERAL OFFICERS

I NOW hark back to take up the other thread with which the fabric of this narrative is woven, that of supply.

The whole interior economy of the regiment being at first in the hands of the colonel, there were no official scales or regulations; but some idea of what the soldier was supposed to have can be gleaned from a Warrant of 1677. This, however, is only a guarantee to tradesmen who might otherwise be disinclined to provide for "newly raised soldiers and recruits in the present conjuncture." It authorizes the Paymaster General to settle the residue of outstanding bills up to £2 13s. a head, should the men be disbanded before the nett off-reckonings, £2 8s. a year, result in a sum sufficient to defray the cost of the following outfit:—

- 1 Cloth coat lined with bayes.
- 1 Pair of lined kersey breeches with pockets.
- 2 Shirts.
- 2 Cravats.
- 1 Pair of shoes.
- 1 Pair of yarne hose.
- 1 Hat edged and hatband.
- 1 Sash.
- 1 Sword with belt.

But the existence of the army was too precarious for such a thing as a regular scale to be contemplated, and this Warrant only refers to a specific occasion.

Not until 1690 was any attempt made to put some curb on the frauds that were practised. A Warrant was then published which directed that the soldier was to be supplied with clothing every second year; and that regiments were to establish sealed patterns, which were to be adhered to, the contractor's patterns being compared therewith before his tender was accepted. The colonel was to call the several captains together to choose two or three of their number, who were to find out cloth, necessities, etc., according to such patterns as were given

them by their colonel. After beating down the price as low as they could the rates were to be reported to the colonel who, if he approved, was to make a contract with the tradesman, which was to be signed by both the colonel and the several captains. No scale was laid down. The sole check which this Warrant sought to impose was to ensure that the colonel provided articles equal to pattern by means of a regimental contract, for which the captain was also to bear a measure of responsibility.

The matter was only seriously tackled when war with France was renewed under Marlborough almost immediately after the accession of Queen Anne in 1702. It was in time of war that expenses were heaviest; there were far more recruits to outfit, and greater wear and tear. Indeed, Marlborough's excuse for taking bribes from contractors was that the money was needed to provide for recruits. Regimental debts piled up, tradesmen made difficulties and on service or in Ireland the State had to provide a stock of clothing which regiments could obtain on payment, though officers who took a pride in their men's appearance avoided this course if they could, for they were rough frieze garments with no attempt at smartness.¹

Marlborough, besides being a great general, was a great administrator, taking pains to see that his men were well cared for, well fed and properly clothed; and it was due to him that matters were put on a better footing and a centralized system of inspection set up.

The first step in this direction occurred in the year 1703 when the office of Controller of Army Accounts was created by letters patent. This office was to inspect all

¹ A cavalry colonel writes from Cervera, in Spain, in 1707: "If your Excellency thought fitt, wee might (have) the hatts made here, for there is no depending to have them out of England and half of them when they come are eaten with the ratts, besides I fear much that my Lord would order us to take them out of the stores, as he hath done to Peper and Pierces (two Infantry Regiments). I could not endure to see the Regmt with white, or yellow tape laced hatts, with a little white Cony Skin for a cockade." And a year later: "It was well wee had hatts made on purpose, for wee had been obliged to take nasty Foot hatts out of the Stores, these are very good, do not come to ten shillings each, and wee have but for the effectives."

regimental accounts and muster rolls, check the two together, and see that the cost of arms, etc., issued by the Ordnance was booked up against the regiment. The instruction reads that: The General (Marlborough) having approved and sealed the patterns for clothing, the colonels are to contract for its supply, and exhibit to the Controllors the contracts, which must specify the qualities, quantities and prices of each particular. The colonels or their agents are to exhibit to the Controllors the debt owing on their off-reckonings on February 24th, 1703. In England the Controllors are to take care that the clothes for the army are furnished according to contract, abroad a certificate to this effect is to be rendered by the Captain General or his deputy; and they are to see that the clothing does not exceed in cost the amount of the off-reckonings. Having satisfied themselves on these points, the Controllors are to certify the Paymaster who, in the absence of this certificate, is not to part with the off-reckonings; and where regiments are in debt, they are to see that it is gradually reduced.

This was followed on January 14th, 1707, by a Royal Warrant of great importance, for the system it established was destined to endure for 150 years; it is the first charter framed to protect the soldier from the rapacity of his colonel; is the basis of our modern clothing and equipment regulations; and is, moreover, a striking example of Marlborough's genius as an administrator.

The salient feature of this Warrant was the establishment of a Board of General Officers, themselves colonels of regiments, who were to supervise the provision of clothing by each individual colonel. The patterns were to be kept in the office of the Controller of Army Accounts in the Privy Garden, a site now occupied by Whitehall. Here the Board held its meetings, examined the proposed contract in conjunction with the Controller, and enquired into the state of the regimental account to see that it was in a position to pay for what it proposed to order. Later, when the clothing was made up, it was to be inspected by three members of the Board "parcel by parcel" to see that it conformed to pattern.

The scales, originally intended to apply for the campaign of the next year and that which followed, were perpetuated, resulting in a biennial issue for cavalry and dragoons (such odds and ends as were supplied in the alternate year being termed a half mounting), and an annual issue for infantry, with the addition of a waistcoat, and extra linen for the recruit; the waistcoat in the succeeding years being made out of the previous year's coat.¹ Accoutrements, saddlery, etc., when worn out or if lost in action were to be made good by the colonel unless due to negligence, when the captain had to bear the cost of replacement. A further point is that this Warrant gives official sanction to contingent or non-existent men being borne on the books, and fixes their number. Marlborough also insisted on strength for the infantryman's clothing. The coat was to be good, full-bodied and well lined, other articles good and strong; the implication being that they had lacked these qualities in the past, and that it was for the Board of General Officers to see that this important feature was not neglected in future.

The plan adopted by the Board was as follows. Firms who obtained contracts submitted samples of what they proposed to supply, which were compared with the regimental sealed patterns. If found suitable these samples were sealed with the seals of three of the Board and the office seal, and returned to the contractor. The latter then proceeded to make up the bulk of the order, which was next examined by one or more of the Board at the contractor's premises, to see that it was up to the standard

¹ A copy of the Warrant exists in the War Office Library in a volume of *Finance Reports to Parliament* dated 1797-98. The infantry scale is as follows:—

For the next campaign of 1708.

A good full-bodied coat, well lined.

A waistcoat.

A pair of good kersey breeches.

A pair of good strong stockings.

A pair of good strong shoes.

Two good shirts.

Two neckcloths.

A good strong hat well laced.

For the second year.

As for the first year, except that the waistcoat was to be made from the old coat and only one shirt and neckcloth were to be provided.

of his sealed sample ; but no one was allowed to view the clothing of his own regiment.

There were no scales or inspection for accoutrements, saddlery, swords or other appointments ; these it was left to the colonel to provide as he thought fit. They were repaired regimentally and made to last as long as possible ; after which they were replaced out of the off-reckonings. In the infantry the cost of their upkeep was a trifle, in the cavalry a substantial item.

The next step was for the colonel, through his agent, to arrange for packing and delivery. If the regiment was abroad, he employed a firm of packers or merchants to carry out shipment, and had the additional expense of freight and insurance to pay from his off-reckonings. The Board also dealt with disputes between successive colonels as to their respective liabilities. There might be claims against the widow or executors of the estate of a deceased officer for which the new incumbent refused to hold himself liable.¹

Although appointed originally to supervise the provision of regimental clothing, a term which embraced accoutrements and saddlery, the Board of General Officers also became in the course of time an advisory body on other matters submitted to it ; there being at this period no permanent Commander-in-Chief's office. For instance, it enquired into breaches of discipline or misconduct on the part of officers, such as occurred when we lost Minorca ; the Judge Advocate presiding and drawing up reports for submission to the Crown.

It is not difficult to put one's finger on the weak spot in this organization. Everything was left to a Board of Officers, who were themselves colonels of regiments and whose sympathies must have been with their brother officers rather than with the rank and file. It was too much to expect them, however honourable individually, to be impartial where their own pockets and those of

¹ In the history of the 12th (Sussex) Regiment a case is quoted in 1726 where the colonel's widow had to furnish 380 firelocks found to be deficient at a cost of £608. This cannot have been far short of the full complement supposed to be held.

their friends were concerned. Moreover, a Board of Generals, changing from year to year, was bound to be at the mercy of an unscrupulous contractor whose object was his profit. They would know little or nothing of the tricks of the trade, or how to detect shoddy clothing, belts or saddles.

But while it is easy to criticize, the system was probably the best that could be devised when there existed no other machinery to do the work. Moreover, it was vastly better than having no system at all. It provided that the soldier should have a regular issue of good strong clothes ; that some of the highest officials of the army should see that they were of proper quality and quantity ; and that the colonel, before he could pocket any profit, should buy what was necessary under the terms of a legal agreement with stipulated prices.

The extent to which a regiment might be in debt can be gauged from a Royal Warrant of 1712 which authorizes the sale of a company in the first regiment of Foot Guards to assist in the clearance of a deficit of £8812, owing to which no tradesman would undertake to clothe it. In this same regiment there was an outbreak, almost a mutiny, in 1715, on the anniversary of the Restoration, on account of the quality of clothing supplied ; the main cause of complaint being the "extreme coarseness" of the shirts. The men threw their shirts over the wall of the King's garden shouting out that they were "Hanover shirts." Marlborough was called in to quell the disturbance, and pacified the men, ordering the obnoxious garments to be publicly burnt and the contractor to furnish others. Had there always been someone of his calibre at the head of affairs probably things might have worked better in time, though the incident, occurring as it did in the heart of the metropolis, shows that matters were still far from right.

Two modifications to the Warrant of 1707 during the period covered by this chapter were also framed in the interests of the soldier.

A Warrant of 1729 makes only trifling alterations in

the scales, but it emphasizes the fact that cavalry boots and saddles are to be replaced as they shall be found wanting, and at the judgment of the general officer who may review the regiment. Owing to frequent abuse in the regular supply of clothing to regiments stationed abroad, it further directs the governor or senior officer at every foreign garrison, and also the commanding officer of the regiment, to render certificates, after personal inspection, that every man has received the clothing to which he is entitled and that all are properly clad and accoutred. The same steps were to be taken at home and the certificates were to be examined by the Board of General Officers. Should any irregularity come to light the Board was to solicit the Sovereign's instructions.

Next followed a Warrant dated 1736, which fixes the proportion of mounted appointments to be supplied with each issue of clothing to cavalry and dragoons, laying down in substance their periods of duration—that for a saddle being eight years. The colonel was to certify that he had purchased the full number of each article and the captain that they had actually been delivered.

These two Warrants, which institute a system of local inspection after delivery with certificates from officers that the clothing had actually been supplied to the men, and which define the colonel's responsibility for providing new saddlery and appointments, indicate sufficiently clearly that the Board of General Officers had failed to eliminate abuses, especially abroad where it was well-nigh impossible to get a grievance righted; and where it was not uncommon for regiments to be in rags, their accoutrements rotten and their shoes unfit to march in.

With Marlborough's guiding hand removed, the Board became most lax and effete. The examination of contracts was discontinued and the practice of making them lapsed altogether. So did the rule that certificates must be lodged with the Judge Advocate General to the effect that regiments were properly fitted out before their

colonel could pocket the off-reckonings.¹ Once more the colonel and his agent had a free hand ; there was no check on price, quantity or terms of purchase. Nor was there any real check upon quality. It was at this time that minute attention began to be paid to the pattern of the soldier's uniform, and the Board of General Officers expended its energies on such matters as seeing that lace was sewn on to suit each new fashion, quite ignoring any question of serviceability.

To ensure a good fit, clothing was delivered basted instead of being made up ready for use, as described in the following account : "The clothing formerly came down to a regiment just stitched together, commonly of three sizes. All the tailors of the regiment were then assembled in some tent or large room under the inspection of a sergeant as master tailor, and a sentry set over them to prevent their leaving their work ; the men with their clothes according to their sizes, had them tried on by the tailors, and separately fitted; they were then in a manner re-made and the lace fresh sewed, for which the usual price was 1s. 4d. per suit, deducting the price of the thread, which 1s. 4d. was stopped from the soldier's pay. Many regiments wetted the clothes before they were altered ; some colonels would not permit it, thinking it greatly injured their appearance ; the consequence was, that after the first shower of rain, the soldier found himself pinioned up in a strait waistcoat. The coat of the preceding year's clothing was made into a waistcoat and forage cap, which was separately paid for ; in some regiments the colonel allowed 1s. towards the payment."² In substance the cost of tailoring was transferred from the colonel to the private ; and the latter, besides the stoppage from his pay, had to wear a most uncomfortable coat.

In 1746 the House of Commons appointed a Committee to ascertain how it had come about that army expenditure

¹ A Warrant of 1742, quoted in the *Historical Records of the 7th Hussars*, allows the Board to assign off-reckonings for regiments in the West Indies without any certificate.

² Grose's *Military Antiquities*.

had so increased, and its report gives some interesting particulars.

To begin with, the Committee found that in 1714 officers were given an allowance, increased three years later, to provide themselves with servants. To modern ideas this seems most liberal; it provides the colonel with the equivalent of six servants, the captain with three and others in proportion. It was then particularly directed that servants were not to be on the regimental establishment or mustered as soldiers. This proviso had fallen into desuetude, so that officers pocketed the allowance and employed soldiers as well. Next, in 1716, allowances had been granted to cover the cost of pensions to officers' widows, to recoup the colonel for the cost of replacing clothing taken by deserters, to enable him to pay an agent and to help the captain to provide recruits. It was to cover expenses such as these that warrant and contingent men had been authorized, yet warrant and contingent men continued to flourish and increased in number, and the agent pocketed 2d. out of the whole pay plus the subsistence money of one man per troop or company. One agent stated in evidence that he paid £400 for the post. Incidentally, when investigating the payment of pensions to officers' widows, it came to light that Mr. Sainthill, the paymaster for this service, lived in Devonshire, and had not been seen at his office for two years. The Committee accepted this fact without comment, and was satisfied with the evidence of his deputy. Both were of course paid from the widows' pensions.

The Committee next examined a Deputy Commissary of Musters, who says he paid his predecessor £1250 for the job. For taking a muster he got a guinea and a free dinner from the officer, or sometimes only half a guinea; if this was not tendered he politely hinted that it was customary. Some officers, however, resolved to keep their companies complete and gave him nothing. Muster parades were supposed to be held every two months, but it was the practice to make one muster do for both the preceding and subsequent period. The roll was prepared

twice over and two dates in different months, a few days apart, were inserted. Sometimes one parade was even made to serve for three periods. Very often no office was present at the muster; he signed the document afterwards and sent it on to London. An officer says that in Scotland he had never seen a Muster Master in two years; and they never went abroad, the rolls being prepared by the regiment and forwarded to England to be signed by the Commissary of Musters. These were the documents submitted to the Office of the Controller of Army Accounts, by means of which it was supposed to check the regimental accounts and off-reckonings, and naturally they were absolutely worthless.

When a new regiment was raised, the colonel was credited with extra off-reckonings, but on no fixed scale—sometimes for 14 months, sometimes 20, or two years in the cavalry where the initial outlay was greater. A witness recollects a case where the colonel had been granted a special allowance to compensate him for a loss of clothing and equipment on service, and another had now preferred a claim for £1032 on account of a similar loss at Fontenoy. As the soldier's pay was intended to cover all regimental expenditure even in war, army estimates made no provision for such contingencies; but the difficulty was surmounted by a very simple expedient. A Warrant was issued authorizing the regiment to hold extra warrant men on its establishment until the debt was cleared. This process was adopted in other cases where claims were made on account of unavoidable expenditure—for instance, if a cavalry regiment was ordered to transfer horses to another and had to bear the expense of purchasing a fresh lot. Altogether it was not surprising that army expenditure was on the increase.

By now the pay of warrant and contingent men was regarded as a regular part of the officer's emoluments, and the Committee had the impression that the colonel made some £750 a year from the privilege of outfitting his regiment. That there was a large profit is beyond question although evidence was adduced to the contrary. But the documents laid before this Committee are not

to be relied on, being based on establishments instead of strength. They are not even supported by muster rolls, though this really makes little odds.

Another matter noticed by the Committee was the extraordinary divergence between the figures given by the clothing contractor, the tailor who made the garments, and the packer who forwarded them. Sometimes it is quite impossible to reconcile these. For instance, in one case the contractor claims to have supplied 4919 suits to a regiment between 1740 and 1745, the packer's records show that he shipped 2200, while the tailor states he only delivered 1806 to the packer. No explanation was given of these discrepancies, which evidently point to fraud on the part of the colonel, agent or clothier, or all in collusion.

With nothing more than a perfunctory examination on the premises of the contractor, there was no guarantee that what was viewed ever reached the regiment ; and the certificates which the latter rendered were probably as worthless as the muster rolls. It would be a point of honour for the regiment to uphold the integrity of its colonel ; a very serious matter to impugn his honesty.

Nor would the reports rendered by General Officers at their annual review be of more value. It is not uncommon for these to state, even at home, that the regiment had been inspected in its last year's clothing owing to the non-arrival of new ; and comments are mainly concerned with details peculiar to the regiment or saying whether coats are well fitted and hats well cocked.¹ Moreover, so as to make a brave appearance at this annual inspection, it was a common practice to withhold the clothing due to the soldier until the occasion

¹ A collection of these reports exists in the Public Record Office, full extracts of which have been published in the *Journal of Army Historical Research*, October 1924 and subsequent numbers. The Inspecting Officer's remarks are confined to smartness, not serviceability. The following typical comments refer to the 11th Regiment of Dragoons (11th Hussars) : "The officer's furniture, though pretty, is not according to regulation"—1776. "Clothing is remarkably enlivened by buff wings to the upper jacket which have a good effect, particularly when in squadron"—1790.

of the review, and then withdraw it again so as to make an insufficient quantity go further. This Committee merely took evidence and recorded facts; it made no recommendations, nor did its report lead to any result.

A Warrant of 1768 made a minor change in the scale for a foot soldier. With the new style of coat then introduced the waistcoat showed so much that to make it from the last year's coat was probably unsightly; and the soldier was allowed the new forepart of a waistcoat yearly, the hind part only being made from the old coat. To compensate the colonel for this extra charge he was relieved of the obligation to provide the extra linen and stockings previously allowed for the recruit. Thus a smart appearance was again cultivated at the soldier's expense. The yearly scale in the infantry was then 1 coat, 1 waistcoat, 1 pair of breeches, stockings and shoes, 1 hat, 1 shirt and 1 neckcloth; but the bearskin caps introduced that year, which were costly and durable, were only to be replaced as found necessary.

Apart from the fact that there was an allowance of small-arm ammunition these were the only regulations in existence. The regiment settled what necessities the soldier was to provide from his subsistence. The Board of General Officers, however, did fix certain rules for cavalry in 1759. Horse cloths, snaffle bridles, leather bags and goat-skins were to be paid for by the soldier out of grass money, the portion of his pay intended to purchase forage. Cover-locks and hammer-stalls were to be found by the captain as they saved him expense in repairing muskets. The captain was to pay the cost of repairs to arms, accoutrements, swords and bayonets, and every appointment not mentioned above was to be found by the colonel.

The state of army administration at the end of this epoch can now be summarized. While command was vested in the Crown, Parliament controlled the purse strings. It was through Warrants countersigned by the

Secretary-at-War, a parliamentary official, that regiments were raised or disbanded, their establishments regulated and their movements ordered. But the Georges were active in politics, and the power of the Sovereign over the army tended to increase rather than to decrease. It was in 1780 that Dunning's famous resolution—that the influence of the Crown has increased, is increasing and ought to be diminished—was passed by the House of Commons.

In principle the regiment received nothing free except its pay, from which it had to provide both men and materials, unless otherwise ordered by special Warrant. The machinery of administration was vested in three sets of officials: the Board of Ordnance, Board of General Officers and Paymaster General, concerned respectively with munitions, with clothing, accoutrements and saddlery, and with pay. The Paymaster's office was never reformed. Two great landmarks stand out and two only—the Clothing Warrant of 1707 and the Ordnance Warrant of 1683. Honestly interpreted these should have inaugurated a new era. But such was not the custom of the time. These admirably framed regulations were soon ignored, first in the spirit and then in the letter; becoming as those good resolutions with which Hell is paved. Officials of the Ordnance Office waxed fat on their fees without showing any great zeal for the efficiency of their munitions. The Clothing Board was content to see the colonel's emoluments mount up, so that the value of an officer's commission constantly increased at the expense of the State and private soldier.

Even now, however, forces were coming into play which tended to make this, the most degraded period of public life, pass away. These will be discussed in the next chapter.

PART III
THE INDEPENDENCE OF AMERICA TO
THE CRIMEAN WAR

CHAPTER VIII

ORDNANCE SERVICES ADMINISTERED REGIMENTALLY

THE latter part of the eighteenth century witnessed a great change in the relations between the nation and its soldiery. It was coming to be realized that a standing army was no mere temporary expedient, some day to be abolished ; but as necessary a part of the machinery of government as the navy, which was never subject to the suspicion and jealousy attached to its sister service. A far greater revolution was in progress than that which cost King Charles his head, that which led to the restoration of the Monarchy, or that which resulted in the final eclipse of the Stuart dynasty. England was ceasing to be an agricultural country growing its own food and making such commodities as it needed by hand. It was becoming industrialized, machinery was replacing manual labour, processes of manufacture were being specialized and the population migrating from the country and concentrating in towns. Hitherto the only capitalists had been merchants who exported goods in exchange for raw materials ; and just as a navy was wanted to protect trade routes for their merchandise, so were troops needed to hold India and the colonies where their markets were situated. But this furnished no reason for keeping a standing army in England.

Now entirely new conditions arose. A new race of capitalists came into being, who owned the buildings in which industry was carried on and were large employers of labour. This upheaval in the whole national life was not accomplished without very serious industrial trouble. Families were thrown out of employments they had carried on for generations, conditions in factories were disgraceful, hours of work appallingly long, the unskilled labour of tending machines being entrusted to miserably paid children. The employer's one aim was to reap as much profit as possible. It was at this time that the modern trades union movement was born, in the form of

secret societies ; for workmen were forbidden by law to combine with a view to getting a higher wage. Riots were frequent all over the country, mills were broken up, ricks fired, and a standing army was wanted in England for police duty to maintain law and order ; a civil police not being created in London until 1829 whence it gradually spread throughout the land in the course of the next thirty years.

If the soldier's lot tended slightly to improve at this time it was not due to any sentimental feeling of commiseration for his miseries ; nor, I believe, owing to the martial spirit that pervaded England during the Napoleonic Wars. It was because an untrustworthy police force would have been worse than useless. A discontented soldiery would have been apt to side with the populace instead of suppressing disorder. If there was a Waterloo there was also a Peterloo. A proof is that such concessions as were made applied at first solely to the United Kingdom, being extended to Ireland and the colonies only later. It was asserted that the soldier was better off abroad ; a quite untenable proposition if everything is taken into account, even if he had a few extra pence to spend on drink. Indeed foreign service was still awarded as a punishment.

The lack of barracks has been quoted in illustration of the policy of the country to its army, and their erection furnishes an equally apt illustration of this change of outlook. In 1792 a Bill was brought into Parliament for the creation of a Barrack Department to acquire land and erect barracks all over England. The opposition took the time-worn argument that the segregation of the troops would tend towards a military and despotic form of government. "Was there not," said Fox, the Whig leader, "as much reason to be afraid of barracks as in 1740 . . . the mixing of the soldiers with the people from whom they imbibed the same principles and the same sentiments, was the best security of the constitution against the danger of a standing army." The reply of Pitt, the Prime Minister, was that "a spirit had appeared in some of the manufacturing towns which made it

necessary that troops should be kept near them. In these towns then, to dispose of the troops in barracks was a plan far better than to distribute them among the mass of the people, where jealousy might rankle into hatred, and produce tumult and disturbance." The Bill was passed and the custom of billeting troops on the country disappeared. With this change the nation became less sensible of having an army quartered upon it, and the necessity of reducing its strength on each occasion of peace was less felt, so that establishments became more permanent.

The next year may be said to be that in which the army was finally recognized as an established institution ; for it was only since then that the office of Commander-in-Chief had an uninterrupted existence. This change was badly needed, for discipline was deplorable owing to corrupt parliamentary influence.¹ The Commander-in-Chief became responsible to the Crown for discipline, movements and quarterings, appointments and promotions ; while the Secretary-at-War, a parliamentary official, was concerned with matters of finance. Thus a dual form of army control was set up which frequently resulted in friction, for it was impossible to separate the two functions entirely. For instance, discipline and recruiting were bound to depend largely upon the rate of pay and scale of clothing.

The Commander-in-Chief (and this was so until the present century) had two principal staff officers only. His Adjutant General dealt with clothing and regimental equipment, with advice from the Board of General Officers ; while camp and field equipment came within the province of his Quartermaster General.

In 1794 a Secretary of State was appointed to take charge of the conduct of war with France ; and in 1801, because there was so much fighting in the West Indies, the

¹ Lord Amherst, the first occupant of this now regularized post, refused promotion to the officer nominated as his aide-de-camp on three successive occasions. Yet the latter openly boasted that he would obtain his promotion and in fact did so through the influence of a Minister, and to the disgust of his brother officers.

direction of colonial affairs was transferred from the Home Office to this official who became Secretary of State for War and the Colonies. But he was only concerned with matters of high policy in connection with military operations and had little or nothing to do with the army in time of peace.

Another change was that the State took over recruiting, hitherto a purely regimental affair, in 1799. Officers' personal interest in preventing discharge or desertion ceased and engagements were sanctioned for a term of years instead of being always for life. All these measures tended to place the army on a more solid foundation.

The industrial revolution affected the army indirectly in another way. Judging from his style of dress, the popular representation of John Bull, the jolly stout country squire in cut-away coat, top-boots and top-hat must be due to this time ; but even then it was becoming out-of-date. The typical Englishman of to-day would be much more accurately represented by a lean-faced mechanic in overalls, wielding a spanner in place of a hunting crop. The new Captains of Industry largely replaced the country squire in the councils of the nation and formed a strong party, the Whigs, in Parliament. They were men of business and caused searching enquiry to be made into the national expenditure and revenue. Sinecure and patronage were suppressed and Government offices swept and cleansed. In this process the army did not escape scrutiny. From now onwards Royal Commissions and Parliamentary Committees of Enquiry into every branch of military administration were frequent, especially during the Napoleonic wars, and various abuses were rectified. These reforms tended to improve the soldier's welfare ; though it still left very much to be desired. Desertion, fraudulent enlistment and other forms of military crime were checked, if only slowly. Even Wellington, to his shame be it spoken, refers to his men as the scum of the earth, faithfully though they served him.¹

¹ Compare this with Lord Roberts' dictum of the troops he commanded in South Africa : "They bore themselves like heroes on the battlefield and like gentlemen on all other occasions."

Chief among these reforms was that of the Paymaster General's office. The Paymaster General had a sum placed annually to his credit wherewith to pay the army, out of which he was entitled to a shilling in each pound as remuneration. This pay he doled out as it was due, so that there remained a vast amount at his disposal to lay out in private adventure. Moreover the forms of account were so intricate that they took years to unravel ; so that it was difficult, often impossible, to get the Paymaster General to disgorge his balance on quitting office. The post was the most lucrative in the gift of the Government, especially in time of war.¹ Army finances were now put on a sounder footing under Treasury control. The Bank of England kept the funds, issued them as necessary, and the Paymaster General's poundage was done away with.

Hitherto the soldier's pay had remained unchanged since 1660. While it is true that the grosser scandals of the seventeenth century had abated and he was not so openly and shamelessly robbed, yet money possessed less purchasing power ; his allowance of clothing had been reduced, and the exaggerated attention paid to military millinery and hairdressing led to extra burdens being laid on his back. His plight had if anything grown worse.

Apart from a small allowance granted in 1767 on account of the increased cost of bread, the first concession to relieve his distress is described in the following announcement of the year 1771. "The Secretary-at-War states that the wages of every artificer in the Kingdom have been raised, but the soldier's pay remains the same.

¹ Henry Fox, first Lord Holland, who amassed an immense fortune in this way, writes : "The Government borrow money at 20 per cent discount, I am not consulted or concerned in making the bargain. I have as Paymaster great sums in my hands, which, not applicable to any present use, must either lye dead in the Bank, or be employed by me. I lend this to the Government in 1761. A peace is thought certain. I am not in the least consulted, but my very bad opinion of Mr. Pitt makes me think it will not be concluded : I sell out, and gain greatly. In 1762, I lend again ; a peace comes, in which again I am not consulted, and I again gain greatly." *Charles James Fox, Drinkwater.*

In a marching regiment his weekly pay amounts to 3 shillings (deductions are 1d for regimental paymaster and surgeon, 5d under name of arrears to provide him with shoes, stockings, shirts, etc. beyond what is supplied by the colonel according to regulations and many other things which go under the name of necessaries). With this 3 shillings he is to fill his belly, wash his linen, shave his beard, powder his hair, black his shoes, colour his accoutrements, etc. etc. This he could do if he really got the 3s., but 6d. is stopped for purchase of necessaries to increase the 5d. original stoppage which is insufficient. The full pay of a foot soldier yearly is £12. 3. 4., of which the Paymaster General retains £2. 5. 11½. for clothing, 2. 8½ is deducted as hospital stoppage and agency, and 12. 2d. for poundage.

“His Majesty, attentive to the wants as well as to the conduct of his troops, exempts privates in these hard times from poundage, and from the regimental paymaster and surgeon’s stoppage; by this means the private will have 16s. 6d. a year more, sergeants, corporals and drummers will also be exempt from the regimental paymaster and surgeon’s stoppage, and so will have—sergeants, 8s. 8d., corporals 6s. 6d., and drummers 6s. 6d. a year more.”¹

The remitted poundage was credited to the regiment, but the necessaries to be provided from it were not defined until the year 1792. A Royal Warrant was then promulgated which states that it had always been intended that the 3s. a week subsistence should be free of all deductions whatsoever and reserved for food; but that the expense of providing necessaries had become so great that large stoppages were unavoidably made. It details the items for which the soldier was not to be charged, and those for which he was to pay. The enormous cost of necessaries by this time, as compared with that of the clothing and equipment which the soldier received as a free issue, is very striking. But for these concessions the annual cost

¹ Although poundage was remitted so far as the private was concerned, it was not actually abolished until some ten years later after Burke’s great Reform Bill.

to the infantryman of the former would have been £4 2s. 4½d.; whereas the colonel's off-reckonings, £2 5s. 11½d. a man, not only sufficed to provide the whole of the latter, but left him besides a handsome margin of profit on each serving soldier. A Warrant of 1795 detailed the minimum quantity of necessaries of which the soldier must be in possession before he could draw, each month, any residue of pay that might stand to his credit. Thus were scales of necessaries first introduced.¹

Other allowances followed such as extra bread money, beer money, barrack accommodation, and then extra pay ; so that the soldier was no longer literally between the devil of desertion and the deep sea of starvation, poor though his standard of life remained.

With the army more firmly established as a national asset and liability, Parliament began to realize that to allow officers to clothe and equip their men, making such profit as they could from the transaction, was not altogether satisfactory. It must be borne in mind that until after Waterloo a general only drew pay as such if in command of troops or if holding some appointment such as the governorship of a colony. Otherwise the only way of rewarding a senior officer was to give him the command of a regiment, a post corresponding somewhat to that of Colonel Commandant at the present time. Not only did he then make a profit from the off-reckonings supposed to be devoted to outfitting his regiment, he also pocketed either the entire pay or else the off-reckonings of a substantial body of fictitious warrant and contingent men.

Never were the defects of the system so glaringly illustrated as during the Napoleonic Wars, when all our fighting forces immensely expanded. The establishment of an infantry regiment, 364 rank and file in 1792, was 1102 in 1796. Many were given second battalions, numerous new corps were raised and the militia embodied.

¹ These, the first official scales of necessaries, are quoted in Appendix IX.

The militia competed with the regulars for recruits, men called up for service in the former offering as much as £60 for a substitute. Recruiting failed to keep pace with the immense demand, despite the continually increasing bounties which were offered ; and the difference between establishments and effectives was increased by casualties or the drafting of men from one unit to another. Yet the colonel drew the clothing allowance for the full establishment plus an initial outfit allowance for every extra man added to it, whether or no he existed. Nor was it only when there was an increase of establishment that the colonel benefited. He was credited with his allowance eight months before the beginning of the clothing year ; and if any reduction occurred in the interval he kept the full amount. Cases are even recorded where the colonel drew the full allowance for a corps entirely disbanded before the beginning of the year to which it applied. The whole affair in fact was a gigantic gamble, depending on the situation of the unit, how far it was recruited and what casualties it sustained. Besides the great loss of public money there was the unfortunate result that the stronger and more efficient his regiment, the less was its colonel's reward.

The position is illustrated in the following table:—

PERIOD	REGIMENT	Off- reckonings and Outfit Allowance	EXPENDITURE					Profit
			Clothing	Accoutrements	Saddlery and Appointments	Incidentals	Total	
		£	£	£	£	£	£	£
July/95 to July/97	4th Dragoons	7405	1499	9	173	1127	2808	4597
	7th Dragoons	7405	4544	1200	1981	663	8388	983 (loss)
July/94 to July/96	16th Foot	5956	316	—	—	54	370	5586
	32nd Foot	5956	4268	1240	—	226	5734	222

Several Parliamentary Finance Committees and Commissions investigated the matter. The system was compared with that in force in the artillery, whose officers had no pecuniary interest in the transaction and where arrangements were much on a par with those at the present day. It was suggested that a similar plan be adopted, that a specific sum be allotted in army estimates to cover the service, that the State should undertake the work, and that the colonels be granted fixed allowances to recoup them for their loss of privilege.

To modern ideas it seems strange that such proposals should have met with little support even in parliamentary circles, for no one, whatever his views on State Socialism, would now dream of advocating that each regiment should independently provide and transport clothing and equipment for its men, especially in war time. But public service was not so efficient and honest as it now is, and State control of such an enterprise was little likely to find favour at that time. With the industrial revolution a school of political economy had come into being, whose great exponent was Adam Smith. This school preached the doctrine that one immutable law in the long run governed all mundane affairs, that of supply and demand. A necessary corollary was that there should be no interference by the State in any matter of trade or commerce or between employer and employee. It would have been quite contrary to this spirit for the Government to set up an elaborate organization to deal with clothing and equipment instead of leaving all to private enterprise and competition.

The Secretary-at-War also opposed the proposition, basing his objections on the grounds that it would be wellnigh impossible to fix the colonel's indemnity which varied so greatly in different times and circumstances, that apprehension would be aroused in the public mind if the State assumed a great business involving the employment of contractors, warehousemen and so forth, that clothing and equipment were likely to be treated with scant consideration if made a public issue, and that the scheme would prove costly all round.

As for the colonels with their small ring of satellites—agents, contractors and packers—it was not to be expected that they should view any proposal to curtail their perquisites except with alarm. They had laid out capital in the purchase of successive steps in rank, a speculation that had turned up trumps owing to the war. Such indemnity as Parliament might be disposed to grant (one pound a day was the figure proposed in the line) would not have sufficed to recompense those who had risen to the top of the tree for the income their investment returned them even in peace time.

On one occasion only do we find the military authorities adopting a different attitude owing to the wear and tear of campaigning increasing the consumption of equipment and when war taxation, combined with Napoleon's attempt to blockade England, sent up prices. The scale of clothing remained the same in war as in peace; and, as clothing represented 12/13ths of the infantry colonel's outlay, he had nothing much to complain of. But saddlery and appointments accounted for half the charges in cavalry regiments and periods of duration for these had been abolished in 1781 as unsatisfactory, the colonel having to find whatever his regiment demanded. Owing to this and to the fact that in 1800 contractors raised their prices for leather work by thirty per cent, the cavalry colonels petitioned for relief. They pointed out that they had laid out large sums in the purchase of commissions, and that their patronage had almost disappeared, so that they no longer appointed their own chaplains and quartermasters; the only posts at their disposal being those of agent, contractor and packer. For the first time they discover "the present practice as very defective where the pecuniary interest of the individual is in opposition to that of the public." They consider it improper that regiments should be below strength; and while willing to continue to clothe and equip them, are of opinion that they can do so more disinterestedly if the matter is not involved with their pay. However, they suggest that it would be best for Government to provide

as this would result in stocks being available to meet emergencies.

This petition was renewed the following year; but its only result was that the cavalry colonel's allowance was increased by fifteen per cent and that periods of duration were reintroduced—20 years for buff accoutrements, 16 for saddles and 6 for minor accessories.

These abortive enquiries and discussions show the disadvantages of the system in time of war. Whatever happened the State stood to lose. When there was an increase of establishment the colonel profited, the same when there was a reduction. When prices rose or there was increased consumption an extra allowance was granted; when prices fell nothing was heard of the matter, it was no one's business to enquire. All that resulted from these investigations was that subsistence and off-reckonings were divorced; the former became the soldier's nett pay and the other the allowance attached to the colonelcy of a regiment. Warrant and contingent men ceased to be taken into account when recruiting, remaining, however, on the statement from which the colonel's allowance was reckoned. Also the mustering of troops by commissaries of muster was abandoned, the duty was undertaken instead by the officer who acted within the regiment as paymaster.

Nor was this the only defect of the system. Perfunctory as inspection had always been, it became more than the Board of General Officers could attempt to cope with when there were some 300,000 to 350,000 sets of clothing to be examined annually.¹ In 1800 a Deputy

¹ In 1799 a permanent Board of five generals and the Adjutant General replaced the annual Board. In 1816 the Clothing and other Boards of generals assembled for special purposes were consolidated into one Board of fifty-five members from whom a committee was appointed annually to deal with routine business. By this time the office had moved to premises in Great George Street, and in 1807 better accommodation had to be asked for so that each set of clothing patterns could be locked up by the sergeant in charge. There had been much confusion and some were lost. In 1837 the curator found that many of the patterns were badly moth-eaten. They were moved to the Tower to be better looked after and all were unfortunately destroyed there during a fire in 1841.

Adjutant General and Deputy Quartermaster General from the headquarters staff were appointed as inspectors and in 1806 two quartermasters of the Guards were detailed to assist and attend to routine matters such as the sealing of patterns and samples.

But the inspectors had not even a clerk to help them, and the whole business was absolutely casual. The sealed patterns emanated from the Adjutant General's office whence they were sent to the Board to be sealed. The contractor then prepared his own samples for the Board to compare with the patterns, and after these samples had been approved and sealed the contractor took them away again. Finally, when the annual consignment for a regiment was ready, the inspecting officer was to examine the bulk by the contractor's samples on the contractor's premises.

Tampering with samples, over which a contractor had such liberty, would have been simple; what reached the troops was never compared directly with the standard pattern. Anything like a detailed examination was out of the question, there was nothing more than a cursory view of a small percentage as a formality, though there was supposed to be a further examination at the packers of what was intended for shipment overseas.¹ For instance, on one occasion a quantity of greatcoats, rejected for being too light, was redelivered with patches of kersey stitched on to the lining to bring them up to weight and passed as correct; and it was only by a pure accident that this was discovered. The quartermasters, whose business it was to examine, were guided by the weighing machine.

Indeed, the inspecting officers themselves asked to be relieved of the duty, although they drew extra pay, contending that it was impossible to do the work properly,

¹ The packer was the regimental storekeeper. He took charge of any clothing not immediately wanted, dealt with necessities, officers' mess gear and so on. It was his duty to see that goods were collected and despatched at the proper time. He arranged freight and insurance, attended the customs and excise office, etc. In fact, his responsibility never ceased till the consignment reached the unit.

that it was an improper interference between the colonel and his clothier, and that the only real inspection was that within the regiment.

So far then as it was intended to ensure that the soldier got the good quality of materials on which Marlborough had insisted, inspection under the Board of General Officers was a mere farce.

Next as to quantity. Throughout the Napoleonic Wars there were complaints as to delay in supply. The Adjutant General's letter-books teem with remonstrances and instructions on this point. In 1804 he calls attention to the extreme irregularity with which clothing is forwarded to the West Indies and to the unserviceability of accoutrements, directing army agents to signify the colonels concerned that immediate steps are to be taken to remedy matters. In another instance the clothing for regiments in Portugal is ordered to be ready for shipment in a certain transport, and a strongly worded letter of censure is addressed to various agents complaining that they have failed to comply with the instruction. In 1793 subscriptions were invited to provide the troops in Flanders with flannel shirts, but the public was asked instead to apply the funds to provide shoes, of which "the consumption often exceeds the funds providing them." The next year a committee was formed at the Crown and Anchor in the Strand to furnish the troops with clothing and earned a letter of thanks from the Commander-in-Chief. Regimental provision was purely hand to mouth, there was no stock to come and go upon; sudden emergencies led to urgent demands which could not be met.

On the other hand the colonel's vested interest checked any tendency towards extravagance. The State would have found it hard to resist appeals from the army for extra clothing for its soldiers on service. Before any alteration in scale or pattern could be made the first question considered by the Board was not so much whether it would add to comfort or health as how it would affect the colonel's purse.

For instance, among the articles at one time provided

free in India and the West Indies was a white fatigue cap. In 1813 the colour, inappropriately enough, was changed to black, the reason being that the white caps were "liable to damage by moth and mildew, subjecting the colonels to considerable loss." The result was that the soldier had to pay for a white cap cover.

Waterloo was followed by forty years of profound peace. Lulled into a sense of security, the whole energies of the nation were devoted to the expansion of trade and commerce. Parliament was too fully engaged in reforming the electoral system and abolishing the corn laws to pay attention to its army, and such enquiries as it made into military affairs were directed solely to economy. Popular feeling always tends to run to extremes and a very strong anti-military spirit prevailed. Establishments were ruthlessly cut down. Efficiency for war was neglected, and the troops became little more than an armed police. Free trade and *laissez-faire* being the watchwords, any suggestion that the Government should take over the provision of army clothing was little likely to find favour. On the other hand prices quickly fell after Waterloo, so it was not to be expected that those in authority in the army should make any move. The price of the soldier's coat, 17s. 6d. in 1815, fell to 13s. by 1844.

There was a suggestion in 1818 that the Storekeeper General, the head of a civil department of the army which came into existence during the late war (which will be referred to in the next chapter), should provide, inspect and distribute. But the military authorities entered a vigorous protest. The military inspectors, they said, were officers of rank quite out of reach of collusion with contractors, whereas in the Storekeeper General's department it was civilian clerks and their assistants who were responsible for passing supplies. It was monstrous to suggest that the work should be entrusted to a civil department, and all to save a beggarly £1 a day to each of the two inspectors! Indeed, the war was carried into the enemy's country and the Commander-in-Chief hinted that the proposal was only made to bolster

up a department that came into existence owing to the crises of the war; and which he suggested might with advantage be abolished. The Duke of Wellington, too, favoured the existing system on the grounds of economy.

One more enquiry into the system was made by Parliament in 1833. The amount included in army estimates for clothing and equipping the infantry then amounted to £225,000, of which it was calculated that the colonels between them pocketed £63,000 with a profit to each of from £500 to £600 a year; and it was impossible to defend the practice of providing money for one purpose and using it for a totally different one.

One suggestion was that the State should purchase materials in bulk and distribute them to be made up in the regimental tailor's shop. The cheap tailoring trade was among the most sweated of industries, carried out in the East End of London by women and children for the meagre pittance of 3s. 9d. a week out of which thread had to be found; so that uniforms had in any case to be remade and fitted regimentally.

But the army mustered all its forces to resist any change. The colonel, it was argued, was actuated solely by a chivalrous desire to leave his men no shadow of complaint. The soldier's interests were amply safeguarded. "If any one soldier," said General Donkin, the colonel of one regiment, "can come forward and show clearly that he and his comrades have received bad clothing, he has the means within his reach of obtaining full investigation which would assuredly end in doing him and them ample justice."

Nothing could be further from the truth. Lord Hardinge, a most distinguished soldier who fought under Wellington and in India, who was twice Secretary-at-War, was later Governor General in India and eventually succeeded Wellington as Commander-in-Chief at the Horse Guards in 1852, writing in 1836, says that "during the last 40 or 50 years the greatest number of cases of anything approaching a mutiny have been caused by the soldier conceiving, in matters of pay or clothing, he is not

fairly dealt with." No one could be better qualified to express an opinion on such a subject than Hardinge. No doubt the private soldier was entitled by regulations to register a formal complaint at the annual review; but he was as likely to get a bad pair of boots replaced as Oliver Twist to get more porridge.

From the leading questions which it put to witnesses it is evident that this Committee was biased in favour of private enterprise, and took little or no account of the inconveniences and speculations bound to occur in time of war. While recognizing that the system is anomalous, giving a profit to the officer from money voted for other purposes, it recommends no change.

When, in 1849, the system was once more attacked by an unofficial Finance Reform Association,¹ the report of this Committee was cited in refutation. Four years later the whole arrangement was to break down hopelessly under the strain of our next campaign.

Turning next to details. During the period now under review a number of minor matters were legislated for, such as the amount claimable by a man whose uniform did not need replacement, the fixing of April 1st as the beginning of the clothing year and of the date when the yearly consignment was to be despatched according to the situation of the regiment, the circumstances in which uniform might be supplied in the form of materials to be cut out and trimmed regimentally—a privilege confined in the main to cavalry. In this way codified sets of regulations were built up.² An innovation due to the Napoleonic Wars was the marking of appointments and necessities with the date of issue. Royal Warrants

¹ *The Times*, January 6th and 30th.

² One paragraph, in those of 1803, contains the startling admission that "the colonels not having the means of making prompt payment for the shoes which they supply, are under the necessity of delivering to their regiments an article of an inferior quality to that which the men can themselves purchase at the same, perhaps at a lower, price for their ready money." Seeing the importance of good footwear in a marching regiment this is a damning confession, but its only result was that a universal pattern of shoe was introduced.

ceased to be issued authorizing an increase in the number of fictitious men borne on the regiment's books to compensate for loss or damage due to active service. Monetary compensation was granted instead, though even Wellington had no power to write off so much as a shoelace. A Board of Claims, composed of three generals, was set up in London to which applications for relief were submitted. But the fact that investigations were made in London instead of at the seat of war led to inordinate delay in investigating claims, some of which took ten years to settle.

After 1815 Clothing Warrants were fewer in number. In 1827 the colonel was relieved of a contribution towards the cost of providing greatcoats and in return was no longer permitted to include warrant and contingent men in the statement from which his allowances were computed. In 1834, in connection with another minor adjustment, they were likewise abolished in the Foot Guards and cavalry. Thus did these relics of the *mort-payé* of feudal days finally disappear.

This mention of greatcoats needs a few words of explanation. In Marlborough's time, with roomy garments, it was only customary to provide a few watch coats in the infantry for use on sentry-go or other rough work. But the soldier's coat had contracted by now into a very skimpy coatee, his waistcoat at one time shrank to a yard of kersey, and it became the custom to provide watch coats more freely, though there was no established scale or pattern. They must have been essential on service, and a pattern of grey-coloured greatcoat was sealed in 1801, which was to be provided for every man except in the West Indies, the cost being divided between the soldier and his colonel who was given an extra allowance.

But there were suspicions that the money was ill applied, and the Government decided in 1808 to relieve the colonel of this responsibility and provide greatcoats by contract. And, notwithstanding a great outcry from army clothiers who lost their business and got Parliament to ventilate their grievance, Government stuck to its

guns ; thus introducing the first article of what is now known as public clothing—the property of the State. But it was a wretched affair, weighing at the time of the Crimean War 3 lbs. 14½ ozs. as against 6 lbs. 3 ozs., the weight of the coat of to-day for a man of average height.

Altogether, at least on paper, procedure became more cut and dried, and there should have been a punctual issue ; but this was not so in practice. Clothing was held back on one excuse or another. It would be served out for an important parade and again withdrawn, or else compensation money would be drawn and spent on new appointments (though the old might be quite serviceable), so as to make a smart turnout.¹

From towards the end of the eighteenth century scales of clothing became much more varied. There were more types of soldier, each with his distinctive uniform, and where this was more expensive it had to last longer. Again, although the same uniform and head-dress were worn universally, some slight modifications were introduced for climatic reasons, such as lighter or no linings. These departures from home scales and patterns were at first very haphazard and probably originated spontaneously at the instance of those affected ; for a regiment still remained to all intents stationary unless there was some reason to move it. Further complications were caused by constant changes in pattern.

It would be tedious to quote the numerous scales. A few typical examples are given in the footnote² ; and

¹ See Appendix XI. This pernicious custom of keeping back the new clothing to which the soldier was entitled, so as to make a smart appearance at the yearly review, died a very lingering death. When I joined the artillery in 1889 the yearly supply of clothing for my battery first saw the light of day at a fitting parade held shortly before the general's inspection, at which the master-tailor noted what alterations were to be made. It was then withdrawn and only taken into wear at the annual review. The custom, however, was then moribund.

² These Clothing Warrants were all based on that of 1707, which provided for a biennial issue to cavalry and an annual issue to infantry. The first refers to the year 1798, and shows that the gunner, clothed by the

if these are compared with what was allowed in the time of Elizabeth, Cromwell or Marlborough, it will be seen that the soldier gradually received less and less as a free issue. The scale was reduced to the barest minimum, the waistcoat even disappearing. When trousers replaced breeches, the colonel had more material to provide for leg wear and the soldier no longer paid for gaiters. The balance was restored by making the waistcoat a necessary.

Board of Ordnance, was far better off than the infantryman. The figures in both cases cover the period of one year.

	Infantry.			Artillery.		
	£	s.	d.	£	s.	d.
1 Hat		4	0		9	4
1 Coat, waistcoat and breeches	1	4	1½	1	15	5
1 Shirt and stock		4	6		6	5
1 Pair stockings		1	3		1	10½
1 Pair shoes		4	2		5	3
1 Watch coat every four years at 11s. 3d.		2	10		—	—
1 Greatcoat every three years at 19s. 1d.		—	—		6	4
Cloth and buttons for gaiters		—	—		3	11
Total	2	0	10½	3	8	6½

The Heavy Dragoon in 1803 received the following :

1 Coat	} biennially
1 Waistcoat	
1 Pair breeches	
1 Hat	} annually
1 Pair gloves	

The Hussar in 1812 :

1 Fur cap and feathers	} every four years
1 Dress jacket	
1 Pelisse	
1 Undress jacket	
1 Flannel waistcoat	
1 Pair gloves	annually.

The full dress being very elaborate had to last a double period.

The Highlander's scale in that year was :

1 Bonnet and cockade	} annually
1 Coat	
1 Waistcoat	
1 Pair shoes	

6 Yards of plaid biennially.
Sporran, belt and feather—as necessary.

The infantry colonel's budget was eventually as follows :—

	s.	d.
Coat	13	0
Trousers	8	6
Boots	8	0
Cap ($\frac{1}{2}$ value)	1	9 (biennial issue)
Accoutrements (estimated)	2	0
Packing freight and insurance	1	6
	<hr/>	
	£1	14 9

This gave him a profit of 11s. 2 $\frac{3}{4}$ d. on each serving private, plus £2 5s. 11 $\frac{3}{4}$ d. on every man short of establishment. His outlay, however, was heavy. In 1833 the official price of a lieutenant colonel's commission in a line regiment was £4500, though unofficially much more was paid ; and in the cavalry the price was far higher.

Meanwhile steps had been taken to regulate the supply of necessities which had never come within the purview of the Board of General Officers. Their provision was purely a regimental affair, managed through the agency of the quartermaster, and the soldier was systematically overcharged besides getting a very shoddy article. In 1844 it was ordered that quartermasters should have no further dealings with tradesmen selling necessities. They were to be bought by a regimental committee and the actual cost, after allowing for incidental charges, was to be published for the soldier's information. This, it is to be hoped, led to some improvement, though their quality remained wretched and the quartermaster continued to draw a secret commission.

By this time the infantryman's pay had risen to a shilling a day, besides which he had a penny as beer money. He still paid for his rations, now issued in kind, but was lodged at the expense of the State. Nevertheless, although his lot was in some degree alleviated by these concessions, the cost of living was on the upgrade and he was still miserably off. However well he might conduct

himself, his outlay on food, necessities and incidentals swamped, not only the whole of his pay, but part of his beer money as well; and the most he might expect to get, when attending the pay table, was one or two pence.¹

During the years discussed in this chapter we can see two opposing forces at work. On the one side was the feeling that it was wrong to farm out the administration of the army to its regimental colonels, on the other the growth of the free trade movement with its policy of non-interference by the State in any matter capable of management by private enterprise. When it is added that the great tide of reform in British political institutions set in only after Waterloo, during a time when the army was utterly neglected, and that the military authorities were determined to die in the last ditch sooner than surrender their perquisites and prerogatives, it will be evident that no root and branch scheme of army administrative reform had much chance of success.

¹ See Appendix XII which is an official budget and thus likely to be optimistic and leave out of account expenditure due to carelessness or accident.

CHAPTER IX

ORDNANCE SERVICES ADMINISTERED BY THE STATE

IN 1780 Burke introduced into Parliament his Bill of Economical Reform, the first attempt of the century to place the national finances on a sounder basis and to reduce patronage and sinecure, bribery and corruption. One of the seven great principles which Burke laid down was "that all subordinate treasuries, drawing to themselves as much money as they can, keeping it as long as they can and accounting for it as late as they can, ought to be dissolved. They have a tendency to perplex and distract the public accounts, and to excite a suspicion of government even beyond the extent of their abuse." There were many of these independent treasuries. That of the Paymaster General of the army was one, that of the Ordnance another. Both controlled immense sums of money. In addition, Burke launched an attack against the whole system of the Board of Ordnance and proposed its complete reorganization.

"It is, I conceive," said he, "an establishment, not well suited to its martial, though exceedingly well calculated for its parliamentary purposes. Here there is a *treasury*, as in all other inferior departments of government. Here the military is subordinate to the civil, and the naval confounded with the land services. The object indeed is much the same in both. But when the detail is examined, it will be found that they had better be separated. For a reform of this office, I propose to restore things to what (all considerations taken together) is their natural order; to restore them to their just proportion, and to their just distribution. I propose, in this military concern, to render the civil subordinate to the military; and this will annihilate the greater part of the expense, and all the influence belonging to the office. I propose to send the military branch to the Army, and the naval to the Admiralty: and I intend to perfect and accomplish the whole detail (where it becomes too minute and complicated for legislature, and requires exact, official,

military and mechanical knowledge) by a commission of competent officers in both departments. I propose to execute by contract, what by contract can be executed, and to bring, as much as possible, all estimates to be previously approved, and finally to be paid by the Treasury.

"Thus, by following the course of nature, and not the purpose of politics, or the accumulated patchwork of occasional accommodation, this vast expensive department may be methodized, its service proportioned to its necessities, and its payments subjected to the inspection of the superior Minister of Finance, who is to judge of it on the result of the total collective exigencies of the State. This last is a reigning principle through my whole plan; and it is a principle which I hope may hereafter be applied to other plans."¹

Burke's idea of divorcing the land and sea services rendered by the Board of Ordnance and subordinating the civil to the military came to naught. Another century was to elapse before these great changes were made. Nevertheless his Bill bore very important fruit.

Hitherto the money voted yearly for Ordnance services had been at the Board's disposal to spend as it pleased. Business had expanded enormously since the Warrant of the reign of Charles II fixed establishments and emoluments. A great number of new depots had been opened and extra posts created; there were many sinecure offices and officials often drew pay in a double capacity. Over all its great business the Board reigned supreme subject to little financial control. Its finances were

¹ The passage in the Bill dealing with the Ordnance Office reads as follows—but it does not seem to have been discussed in Parliament:

"And whereas the command and direction of the Ordnance is properly a military concern, and the establishment of the present board of Ordnance is attended with great expense to the public; be it enacted by the authority aforesaid, that from and after the day of the civil branch, or what is commonly reputed and taken for the said civil branch of the said ordnance (that is to say) the master general, lieutenant general, surveyor general, clerk of the ordnance, clerk of the deliveries, treasurer, paymaster, secretary, architect, council, and all other officers on the same dependant, except the necessary inferior storekeepers, and clerks of the cheque, in the land ordnance service, shall be, and are hereby suppressed."

hopelessly entangled and it was in debt to the enormous extent of £800,000. The debt in one year alone had been £260,000 and the debts dated back to 1714.

The whole business was founded on fees and no transaction was carried out without palm oil. Indirectly this money went to pay the staff at the Tower who were consequently at the mercy of unscrupulous contractors. The portals were open to the widest possible extent, inviting bribery to enter.

The result of Burke's Bill was that matters were put on a better footing. Finance was placed under control of the central Government Treasury. The Board was required to prepare classified estimates showing how the money it proposed to spend was to be allocated under the headings of munitions, salaries and so forth, much as at the present day.

It took some time for the Treasury to straighten things out and settle outstanding bills, but by 1797 the House of Commons was able to report that the delay in settlement amounted at most to 10 months. Later the period was reduced to six months which was not unreasonable considering the usual delays of office. As a result the Board of Ordnance was able to purchase munitions on much more reasonable terms.

Another result was that, in 1783, the Board of Ordnance issued a most peremptory order that any person taking a gratuity from a contractor, acting as a contractor's agent, or enjoying any interest in a contract, however indirectly, was to be instantly dismissed and to be ineligible for further employment of any kind. But bribery was too deeply dyed in the wool of the system to be easily suppressed. Twenty years later the order was repeated, as if it were something new.¹ Moreover a number of sinecure posts continued to exist—such as that of Ordnance Treasurer, whose functions had been abolished. The author of the Creevey Papers held this position in his old age with a salary of £600 a year. The

¹ Fees continued to be exacted from regiments for the delivery of arms or ammunition and from men-of-war when paid off for having their accounts passed. The last of these only disappeared in 1833.

job, a reward for a deserving party politician, was only abolished in 1836. Undoubtedly, however, a sense of rectitude was instilled at this time that gave rise to gradual improvement, even if it left much to be desired.

In no direction had perquisites put such a premium on roguery as in passing goods as fit for service. No system of accounts can be devised to check dishonest or inefficient inspection, for it is only when taken into use that defects are discovered. The Surveyor General with his proof-masters was responsible for this duty, and so grave were the complaints as to the quality of munitions that two energetic artillery officers were set to work in 1779. One, at Plymouth, found only four barrels of powder serviceable in the whole fleet; the other condemned 490 guns at proof in a year. As a result the examination of guns and ammunition was taken out of the hands of the Surveyor General in 1783 and entrusted to officers of the artillery, which led to marked improvement.¹

By that time artillery had become a large regiment of several battalions, and what is now the Corps of Royal Engineers had begun its existence. In 1772, certain civilian Ordnance artisans and some soldiers employed on the fortifications at Gibraltar were formed into a Soldier-Artificer Company, 68 strong, in the interests of discipline. In 1787, in spite of opposition by Parliament where objection was taken to the militarization of free artisans and to their subjection to punishment or disratment at the discretion of the Master General, the principle was extended to other places. A Corps of Royal Military Artificers was formed, whose title was changed in 1813 to that of Royal Sappers and Miners, and who were commanded by certain of the long-established engineer officers of the Board of Ordnance.²

With this extension of its military activities the Ordnance Office developed into two branches, though in

¹ The method of proof is described in Appendix V.

² The officers and other ranks were only amalgamated into a Corps of Royal Engineers in 1856, consequent on their good services in the Crimea; just as the Army Ordnance Corps, commanded by certain officers of the Army Ordnance Department, was formed into the Royal Army Ordnance Corps composed of all ranks after the Great War.

theory the duties of the members of the Board and their joint control over business were unchanged. One side, under the Lieutenant General, dealt with armaments, and these two Ordnance Corps of which the Master General was Commander-in-Chief; the other, under the Surveyor General, purchased or manufactured munitions, was responsible for their custody, and equipped forts and barracks. The Board in fact ceased to function as such. The Master General, one of the greatest personages in the realm and a Cabinet Minister, gave effect to the policy of the Government by conveying its decisions to the Lieutenant General or Surveyor General as the case might be. The matters submitted to Board meetings were merely of a routine nature, those which, in accordance with the letter of the law, had to be sanctioned in this way as a formality. Work in reality was in the hands of permanent officials.¹

¹ A few typical extracts from the ponderous tome containing the minutes of the Board for the year 1781 illustrate this. Sometimes only one member, the Surveyor General, is present and the Master General rarely honours the meetings with his presence. The accounts of the Storekeepers at Chester Castle and Plymouth are passed, having been examined by the proper clerk. The sureties of the Clerk of the Cheque at New York are approved as being suitable. The Messenger is to enquire into the market price of block tin. Powder is to be issued for the exercise of troops. The captain commanding Invalids at Sheerness asks for a spy-glass and is told that the providing of such glasses is not in the Department of Ordnance. A proportion is drawn to cover the expenditure of powder for saluting the King at Tilbury. It is represented that a consignment of camp equipage is short of nine copper kettles; the Board orders that the consignee be informed they were issued complete. Of thirteen artificers sent to Barbadoes eleven are reported to be dead; the Board orders them to be replaced. The Respective Officers at Plymouth report they have no carts or man-harness for dragging guns at Pendennis Castle; the Board orders some to be supplied. The 4th battalion R.A. reports it has received no clothing for 1776, five years earlier.

On one occasion an order is received from the Master General for 200 carbines, 200 pair of pistols and 200 swords to be shipped to Georgia. Five days later an entry states that there are only 53 pair of pistols in store, and no carbines except foreign ones with wooden rammers and without bayonets. It is therefore ordered that foreign carbines be sent, that a pattern of sword be despatched to Woolwich and that the order be dealt with as far as stocks admit. This was during the American War of Independence.

Procedure at home was still highly centralized, but abroad larger powers were entrusted to the Respective Officers, among whom there was now a military element, for they began to be composed of the officer in command of the artillery, the Chief Engineer and Storekeeper. The Respective Officers were important officials at every garrison and dealt in their joint capacity with expenditure of money and stores. If they could not agree the senior had a casting vote.

At home repairs were still usually effected by contract ; but civilian armourers and other mechanics were borne on the books abroad in addition to the enlisted sappers and miners who worked on fortifications. A few civilian artificers such as wheelers, smiths and saddlers were also attached to batteries in the field during the Napoleonic Wars.

By 1796 the number of Ordnance depots, exclusive of the Irish establishment, had risen to fifty-four ; besides which there were small establishments at Windsor Castle, Hampton Court and St. James' Palace. The Board of Ordnance was also responsible for the Military Academy at Woolwich, established in 1741 to train gunner officers, and for Greenwich Observatory, whose staff comprised an Astronomical Observator and one labourer. In 1783, resulting from a proposal by the French Ambassador, it was decided to plot out the mutual positions of the observatories at Paris and London by a system of triangulation, and this led to a trigonometrical survey of the Kingdom being taken in hand, at first mainly under the auspices of the Royal Society. In 1791 this task was officially entrusted to the Ordnance Office, but the job was interrupted by the Napoleonic Wars and other causes, and the first complete Ordnance Survey of the British Isles was not finished till 1853.

Gibraltar and Malta were especially important Ordnance stations during the war with France when we were blockading Toulon, and when Nelson was fighting the Battle of the Nile and chasing the French fleet in the campaign which culminated at Trafalgar. There was also for a time a depot at Bastia in Corsica which was taken

by storm, and it is a matter of interest that Nelson was concerned in its formation, being mentioned in despatches by Lord Hood solely on that account : " Captain Nelson of His Majesty's Ship *Agamemnon* who had command and direction of the seamen in landing the guns, mortars and stores."

After 1792 the Board of Ordnance ceased to be responsible for any barracks other than those used to house its own troops. The new Barrack Department set up that year was a branch of the army. A major general was put in charge with the title of Barrackmaster General, having his own architects and surveyors to acquire land, erect and repair buildings. Almost at once this department became a very important one, for during the Napoleonic Wars the strength of our forces expanded enormously, and thousands of prisoners of war had to be accommodated. In 1797 it took over army hospitals as well. It was claimed that this change of policy resulted in a saving per annum of 3s. 0 $\frac{3}{4}$ d. per man and £4 7s. 11 $\frac{3}{4}$ d. per horse over the cost of billets ; and that this more than covered establishment charges and those for renewals and repairs. " The furniture and utensils are coarse and cheap " reported the Barrackmaster General, and his statement is beyond dispute. Fortescue, in his *History of the British Army*, describes them as " not military barracks but police stations for the maintenance of law and order." The sole accommodation comprised barrack rooms and a guard room, equipped with nothing beyond a few very crude utensils, usually bought on the spot by the Barrackmaster. Wooden berths to hold two or four men were supplied for sleeping, and one can imagine the verminous condition of these bunks which only began to be replaced by single iron bedsteads in 1823. Nevertheless the statement that this innovation led to a saving is very problematical. The Barrackmaster General spent nine millions of public money in a few years. Of this he rendered no account, and it was shrewdly suspected that a great deal went to line his own pocket.

During the course of the Napoleonic Wars several other new departments came into existence to carry out services for the army similar to those performed by the Board of Ordnance for the gunners and sappers; for, just as there was often friction between the Secretary-at-War and the Commander-in-Chief's office, so there was little harmony between the army authorities and the Ordnance Office, which furnished cavalry and infantry with little beyond arms and ammunition.

Indeed, during the first stages of this great conflict the Ordnance Office was far from being efficient. When the Duke of York was preparing his expedition to Holland in 1799 he complained of the scant assistance given by the Ordnance in the way of sappers and miners. The upshot was that a separate corps of military artificers was formed under the War Office, styled the Royal Staff Corps, which remained in existence till after Waterloo. While the Ordnance Office organized its own transport service, the War Office did likewise by creating a Royal Waggon Train. Each again had its own medical service and hospitals, and each found its own camp equipment.

While it had been the custom in past times for regiments to furnish their own camp necessities on service and charge the cost to army extraordinaries, yet a private firm, Messrs. Trotter, had also provided articles of this nature on occasions. It did so in 1775 and even earlier; and in one instance a quantity of the equipment was afterwards sold for the public benefit, though it fetched very little. In 1787 provision for war had been very pressing, but it was not known what regiments would first take the field; so Trotter was employed and his prices proved to be far less than those charged by the colonels. Afterwards the firm proposed to keep such of these necessities as had not been used in their warehouses, ready for any subsequent occasion; and this course was approved. The articles were next used at a camp at Bagshot in 1792 and sent to France in the following year. At the same time colonels were directed to provide camp equipment for their regiments, but were not allowed to

exceed Trotter's prices, and this resulted in a considerable saving.

Soon afterwards it was found that regimental agents were unable to purchase at these reduced prices nor could they provide so expeditiously as Mr. Trotter, who exercised much foresight in laying down stocks by spreading his purchases over lengthy periods to avoid having to buy at panic prices. In fact, in 1794, entirely on his own initiative and at his own risk, he provided camp necessities for no less than 100,000 infantry and 20,000 cavalry to avoid a speculative market : a singular act of foresight. He even provided the Ordnance at times with tentage. From that year Trotter provided for practically the entire needs of the army ; supplying under general instructions from the Secretary-at-War in such quantities as were required for effectives only ; and either repairing or selling for the public benefit such equipment as was no longer needed.

In the same year Trotter, whose factory and business house was in Soho Square, was requested to open a depot at Portsmouth in connection with the war and this was followed by many others, so that by 1807 there were no less than 109 such depots in existence. Most of them were very small, and often situated as rival establishments alongside those of the Master General. The depots were employed to hold not only articles which Trotter provided, but also barrack stores, wagons, medicines and surgical appliances, blankets, clothing, saddlery, accoutrements and even arms ; in fact, anything which it was considered advisable to distribute about the country to meet any sudden emergency. In London the camp necessities were issued under the authority of the Quartermaster General and hospital stores under that of the Surgeon General ; in the country by order of the General Officer Commanding, his Assistant Quartermaster General, Principal Medical Officer or others authorized. For shipments overseas Trotter employed Hodgson and Hayter of Mark Lane, an old-established firm of regimental packers.

All this time, although Trotter's account ran into

millions, the Government had no definite agreement with him. He fixed his own prices and charged 10 per cent profit. Seeing that he probably had to wait a year for payment this was certainly reasonable enough; and it was generally agreed that Mr. Trotter's zeal, honesty and reliability were beyond question and most praiseworthy. His prices were low compared with those charged by the regiment. The latter had been allowed to provide for its full establishment, regardless of strength, and to dispose of the residue after each campaign. This precluded the possibility of making preparation in advance for another campaign.

Not only so, but Trotter devoted great attention to questions of pattern and interchangeability, a matter previously neglected. In the past each regiment had its own type of knapsack, canteen, etc., but Trotter supplied all of the same size and shape. He abolished the practice of decorating knapsacks, tents and camp colours with the regimental device, and in consequence they became interchangeable. He laid stress on the importance of good seasoned wood for the canteen, an article so necessary for every soldier and which might have to serve in the tropics. Being all to pattern, any strap would fit any canteen, any lid any camp kettle. Apart from any question of convenience the result must have greatly lessened the cost.

He invented the first circular tent for soldiers which replaced the inferior ridge-pole tents hitherto used.¹ Also he remarks "that by judiciously depositing camp necessities where they are likely to be used by slow, safe

¹ "Another circumstance materially to be attended to," he writes, "is the pole of this tent, which should be made of the very best yellow deal, entirely free of knots, and at all times, even from war to war, like the calibre of a gun, it should precisely be the same in size at the joint or scarf. To illustrate the necessity suppose them to be otherwise made, and that an army suddenly decamps, scattering the half-poles into waggons or elsewhere, in such case it would be next to impossible to couple them in any reasonable time. This objection was early discovered and fairly stated by the Duke of Richmond, and had nearly operated as a complete bar to its adoption, but fortunately soon after I invented a machine which completely obviated this serious defect, by which the pole is now made with almost mathematical precision."

and seasonable measures, precluding those expensive ones sometimes necessary, such as pressed waggons, coaches, and the like, whereby (the regimental Colour being excluded) the regiment on its march may leave its heavy baggage behind and receive in exchange other camp equipage suited to the occasion at its place of destination, without that harassing interference with the farmer so uselessly expensive, and so destructive to the article itself ; whereby too the expense is wholly avoided by free conveyance in light transports."

Altogether Mr. Trotter furnishes a striking example of what one man by private enterprise can accomplish. His memory deserves to be kept green.

In 1806, without in any way impugning Trotter's integrity, attention was directed to the fact that the combination of so many duties in the hands of one private individual was objectionable ; especially as he was a very independent gentleman, refusing to be hampered by Government contracts, and fixing his own charges. There were complaints from other firms that he held a monopoly. The plan of combining the duties of provider and storekeeper in the hands of one private firm was objected to as being faulty in principle ; and in the following year a new army department was created, that of the Military Storekeeper General. The post was given to Trotter's nephew, with a salary of £1500 a year, his main storehouse being in Tooley Street, Southwark. The duties of this department were defined by Warrant in 1808. It was to have charge and afford safe custody to all stores committed to it by various army officials such as the Commissary General, Quartermaster General, Barrackmaster General or Surgeon General ; storing them in warehouses of its own, providing and issuing only under orders of the branch officially responsible. No uncommon or extra articles were to be supplied without an order from the Treasury and part-worn articles were to be selected for issue at home.

Apart from munitions and regimental clothing and equipment therefore, everything in the nature of stores for the army was at this time dealt with in England by the

Storekeeper General. His stocks even included tomahawks and pipes of peace as presents for Red Indians. With this change Hodgson and Hayter ceased to be employed as packers. Premises alongside the customs house in the East End of London were taken up, and the combination of storage and packing under the Storekeeper General was said to have resulted in economy. At this time the number of these depots was reduced to twenty-five, the main ones being at London, Portsmouth, Plymouth and Leith. Later they were further reduced.

The activities of the Storekeeper General, however, were confined to Great Britain. His responsibility did not extend overseas, and this leads to the introduction of another set of officials. In former wars various functionaries, the Quartermaster General, the Inspector of Hospitals and others, each made his own purchases and impressments in the theatre of operations, hired his own transport, labour, etc., and each submitted his accounts to the Paymaster General. Great confusion and interminable delay occurred in auditing this multitude of accounts which were governed by no hard and fast rules and regulations.

One of the finest passages in the great oration with which Burke introduced his Reform Bill deals with this point. "As the extent of our wars has scattered the accountants under the Paymaster into every part of the globe, the grand and sure Paymaster, Death, in all its shapes, calls these accountants to another reckoning. Death, indeed, domineers over everything but the forms of the Exchequer. Over these he has no power. They are impassive and immortal. The audit of the Exchequer, more severe than the audit to which the accountant has gone, demands proofs which in the nature of things are difficult, sometimes impossible to be had. In this respect, too, rigour as usual defeats itself. Then the Exchequer never gives a particular receipt, or clears a man of his account, as far as it goes. A final acquittance (or a *quietus* as they term it) is scarcely ever to be obtained. Terrors and ghosts of unladen accountants haunt the houses of their children from generation to generation." And of

the Treasury, "content with the eternity of its claims, it enjoys its epicurean divinity with epicurean languor."

In the Napoleonic Wars all such extraordinary expenditure was conducted through the medium of Treasury officials, styled Commissary Generals, who were financial agents of the Government attached to the staff of the army commander. Under his orders they purchased anything obtainable on the spot and rendered one consolidated account. The plan was adopted in England as well. For instance, in 1803, with the expectation of invasion, general officers at home were authorized to expend money in the erection of field works and huts, with beacons, signal posts and spy-glasses for conveying alarms; and to fit up wagons with seats for conveying volunteer infantry to wherever they might be needed at urgent notice. £186,000 was spent in all on this service which was charged through the accounts of the Commissary General.

The Commissariat officials were originally only financial agents, providing money, negotiating bills and dealing with contracts or purchases. But someone was needed to deal at the seat of war with what was bought on the spot or sent out by the Storekeeper General; and, in the absence of other machinery, the duty very naturally fell on the Commissary General and his staff who thus became not only providers, but also storekeepers and store accountants. They formed depots on service under the orders of the Commander-in-Chief conveyed through his Quartermaster General. Their orders were to keep an account of all stores despatched to them, and only to issue in the usual authorized proportions. They were to enter into any local contracts that might be necessary for the provision of bedding, furniture, utensils, etc., and, unless the quantity were small, to send home anything no longer wanted or for sale to the Storekeeper General.

Obviously they were mainly concerned with food for which the army lived so largely on the country and with the hiring of wagons and teams with drivers or pack-horses for its conveyance, the Royal Wagon Train being

but a supplementary form of transport used largely to carry the wounded.

As the war spread from France to the West Indies and elsewhere, the Treasury appointed Commissaries to various colonies to attend to financial and contractual matters, who took charge of any stores sent from the Storekeeper General or provided locally. Sometimes they combined the duty with that of Barrackmaster and were paid partly as Treasury officials and partly from army funds. At home, however, the Commissary General only dealt with finance and contracts. He had no concern with storekeeping.

Some information regarding this organization can be gleaned from the evidence given before a parliamentary enquiry by Mr. Murray, who was Commissary General in Spain and Portugal from 1808 to 1810. He had some clerks and artificers sent him from home and engaged others locally. What was needed was obtained from home, or by local contract, purchase or requisition. In this, magistrates, who he says were often of "very low situation," assisted. When regiments were on the move they applied to these magistrates for anything they might want. The receipt, after being certified by the magistrate, was sent to Mr. Murray to settle the bill. He had the use of a part of the Wagon Train and supplemented this by hiring bullock carts. He was instructed by the Treasury to prepare and send home a schedule of stock when he took over his duties and thereafter a three-monthly statement of receipts, expenditure and remain; but was handicapped at the start owing to the fact that when he arrived the army was on the march. However, latterly he had been able to prepare a monthly stock list, a copy of which he sent to the Duke; and when relieved he ordered a balance of stock and cash to be taken. He anticipates very great difficulty in compiling a store account owing to losses from wastage and plunder when stores were transferred from one Commissary or station to another. In fourteen months his account with the Treasury amounted to over four million sterling, which, of course, includes food and forage. Units or individuals

submitted requisitions for anything required, but the Commissariat had no proper means of checking them and Mr. Murray opines that regiments often drew far more than they were entitled to.

Nor were scales anything but very rough and ready, and few in number. One 12-pint camp kettle for 6 men was allowed in the Peninsula, carried in turn by each, though at times transported by mules. Mules were also provided to carry three tents per company. The allowance of entrenching implements per battalion consisted only of 5 spades, 5 shovels, 5 picks and 5 felling axes. Nevertheless, Wellington insisted on regiments paying for anything proved to have been lost by neglect.

One weakness of the system lay in the fact that the Commissariat officials were civilians, of quite different class to officers of the army, with whom they had nothing in common. There was constant friction between the two. Officers would ride the high horse and this the Commissaries would resent and make difficulties. On the other hand they had their accounts to keep in order, and vouchers to obtain; so a certain amount of sympathy is due to them for what was no doubt resented as red tape. Wellington, writing to Lieutenant General Sherbrooke, says, "I am not astonished that you and the general officers should feel indignant at the neglect and incapacity of some of the officers of the Commissariat by which we have suffered and are still suffering so much," and on another occasion, "the prejudices of society against a Commissary almost prevent him from receiving the common respect due to the character of a gentleman." Wellington kept a close eye on the work of this branch, and continually enjoined tact in dealing with those civilians for whom the Treasury and not he was responsible.

Nor did failure in the Storekeeper's office at home escape his vigilance. In a semi-official letter from Badajoz in 1812 he says, "I am sorry to make another complaint of the Storekeeper General. I lately ordered up some tents to cover the troops in operation here. Some bales marked tents were brought up to Elvas with

the usual inconvenience, and upon opening them were found to contain haversacks," and in the same letter, "I'll attend to your wishes in sending in future samples of articles complained of."

Although the Duke completely lacked that magnetic personality which won Marlborough such devotion from his soldiers, he fully realized the importance of seeing that his men were fittingly cared for even if he regarded them as the scum of the earth.

The Commissariat was also criticized on account of its lack of technical knowledge. Whenever the subordinate staff was sufficiently large, it was divided into Commissaries of account who dealt with money and Commissaries of stores and provisions who dealt with goods.¹ The latter were without practical experience of the variety of articles they handled. Our expeditions were usually fitted out in so great a hurry that much had to be improvised when they reached their destination. The officers of the Commissariat, it was said, needed training and instruction; the business should be a branch of military education. More attention was wanted in the choice of Commissaries as storekeepers. There should be a staff of conductors and issuers. Non-commissioned officers and privates or hired labourers were employed in such work; the former were often recalled for military duty, and the latter unsatisfactory.

On this account it was recommended in 1812 that on extensive military service a branch of the Storekeeper General's Department should be sent to the theatre of

¹ The French army is still provided with food, clothing and non-technical equipment by a similar department, the Intendance, divided in similar manner. And those in executive charge of stores (gestionnaires) are still bonded accountants, like our storekeepers of past days, having to furnish bonds according to the value of their charge. On these they are paid interest so that their pay increases with the importance of their post.

Intendants originally represented the central government in provinces and were highly important officials during the reign of Louis the Fourteenth when the power of the nobles crumbled and the King was the State. But before the Crimean War the Intendance, unlike our Commissariat, had become a military department, officered and recruited from the army; an organization not improbably created by Napoleon.

war to deal with the receipt, custody and issue of military stores (but not food and forage). This staff, however, was not to be concerned with purchases. It was to account to the Storekeeper General but to be subject in its general conduct of business to the Commissary General on the spot. But this recommendation, though endorsed by the head of the Commissariat, did not result in any change of system.

Such then was the plan by which, apart from regimental clothing, accoutrements and saddlery, arms and ammunition, our troops were provided with equipment and stores during the Napoleonic Wars. The organization was improvised and gradually built up. There was no very cut and dried plan, similar in details at every stage and theatre of operations. The essential novelty was that all extraordinary war expenditure was directly controlled by the Treasury through its agents with the troops. Regiments were not troubled with accounts, beyond furnishing receipts and explanations of any loss or unusual expenditure to the Quartermaster General to decide who should bear the cost. The sole accountants were the Commissariat officials, but their accounts took years to check. In one case settlement was not arrived at thirteen years afterwards when, as some of the parties were dead, it was impossible to obtain explanations. The ghosts of dead accountants had not been laid.

The gunners and sappers formed an exception, being catered for entirely by the Board of Ordnance, also far more closely under Treasury control than in the past. The Ordnance was not subject to the disabilities which proved to be the weakness of the Commissariat. It had been in the habit for centuries of providing munitions on service with an elaborate system of accounts and checks. In 1792 a Director General of the Field Train, an artillery officer, was appointed and matters were superintended by the Respective Officers. Thus there was a military element in its administration. Further it possessed a trained staff who at any rate possessed some elementary knowledge of munitions, and had its methods

of procedure established by ancient tradition. A depot would be established at the base of operations with such forward depots as were needed. In the Waterloo campaign the base was at Antwerp with advanced depots at Brussels and Vilmorden. The Field Train not only served for the conveyance of provisions of war in charge of conductors, but also drew the guns and engineer equipment, pontoons, etc., except for the recently formed Horse Artillery which had its own horses and enlisted drivers.

There was doubtless a much closer check on expenditure than in the case of what was provided by the Commissariat or Storekeeper General, and this was certainly so in the case of ammunition. Wellington found it necessary to issue the strictest orders on this subject, for soldiers lost or sold their cartridges and quantities were discovered in baggage sent home. In a circular of September 27th, 1812, he refers to what happened "in a late instance that before the soldiers are engaged for five minutes ammunition is wanting, and the stores are necessarily exhausted, at a great distance from all means of supplying them." He insists that deficiencies be charged for at fourpence a round and a penny a flint. Except in the hurry of action, in cases of extreme necessity, nothing is to be issued without an order in writing from the C.R.A. and C.R.E. (Respective Officers), and receipts are invariably to be given and kept. The greatest vigilance is to be exercised in discovering and checking waste and abuse of gun or small-arm ammunition. Explanations of the cause of demands are to be called for and vouchers of expenditure obtained by the Commissary of Ordnance of the Field Train. In the case of gun ammunition care is to be taken that good cartridges are not removed from packages in reserve or with the troops and damaged ones substituted.

A few little incidents from the correspondence of the Field Train Commissary at Vilmorden in the Waterloo campaign give a human touch to the work of these officials. On one occasion he complains of a conductor who, in a consignment of unserviceable ammunition,

returns him 25 barrels which are quite fit for use. On another he writes to the base that instead of the tools for fixing spherical case shot which he has demanded, he has been sent 14,000 musket balls ! Again he receives a very stiff letter from an artillery major saying that if he does not immediately attend to the repair of his wagons, a subject already brought to notice, the matter will be strongly represented to the Duke.

With the advent of peace, the ancillary services created owing to the exigencies of war one by one vanished. The Royal Wagon Train was first reduced and then abolished, the Royal Staff Corps was disbanded, the Ordnance Field Train automatically ceased to exist, it was never more than an improvised war organization. Hospital establishments were amalgamated under the style of the Army and Ordnance Medical Department. The Store-keeper General's Department and that of the Barrack-master General ceased to have independent entities. In 1820 the former was placed under the Treasury and in 1822 both were taken over by the Board of Ordnance.

The Commissariat had originally undertaken executive work to control, on service, stocks which it purchased. In time of peace there was little work of this sort. It was even proposed that the Board of Ordnance should become universal army providers and undertake all the duties of the Commissariat ; but to this Wellington was firmly opposed, and the economists had to give way. " I do not think it possible," said he, " to intrust the establishments of the Ordnance abroad and in the country with the transaction of this business of the Commissariat ; I am now adverting to a time of peace. In time of war I consider it *absolutely* impracticable—quite out of the question ; it could not be done ; the persons charged with the care of the Ordnance and stores in the field could not take charge of all those branches of business which are performed by the officers of the Commissary General, which go to feed the troops and their horses and animals, and to supply them with the means of transport, and all that is necessary." In this view he was supported

by Lord Hardinge. "There might be some saving by the proposed consolidation in time of peace, but a great deal of danger in time of war. My opinion decidedly is, that everything that is consumed by men or by horses had better be left to the Commissariat; it would be imprudent to place it under the Ordnance."

The idea was mooted again on several occasions. Another proposal was to vest the command of the artillery and engineers in the Commander-in-Chief; to give the Secretary-at-War a seat in the Cabinet and make him responsible for everything connected with the army, including the work of the Board of Ordnance. But such a radical step would have involved many difficulties and nothing resulted. The gunners and sappers were administered on essentially different lines to the cavalry and infantry. They still had a semi-civil existence and there was the Board's naval work to consider. Besides this Wellington always protested vigorously against innovations, and his commanding personality and unique experience were not to be ignored. In the face of strong opposition he strove hard after Waterloo to keep the army together, administered as it had been when he led it to victory.

Nevertheless the Commissariat ceased to exist at home. In 1834 the Board of Ordnance undertook to provide food and fuel in Great Britain. No storekeeping was involved. Centralized contracts were made, the terms of which were communicated to the troops through the medium of the Barrackmasters; and regiments dealt direct with the local agent of the contractor.¹ In the same way if anything of this nature could not be found on the spot in any colony, the Board provided and made shipment. It also placed contracts for the supply of liquor to regimental canteens which came into existence as recognized institutions at this time. Thus only a few Commissariat officials were left in the colonies, whose emasculated duties were confined to looking after the Government

¹ The Ordnance was not concerned with the scales of food and fuel, nor indeed with those of barrack equipment. These scales were established by the Treasury in consultation with the Commander-in-Chief's office.

treasure chest, buying provisions and managing butcheries and bakeries.

The activities of the Ordnance on the other hand increased. The Board found, stored and issued everything provided centrally for the army, and for many other services as well—the Irish revenue department, Metropolitan police and convict stations for example. In addition it acted as a forwarding agency for anything else wanted by the army, such as medical stores and necessaries. More attention was at this time paid to the comfort of the troops in barracks, the result of all this being that while army expenditure was ruthlessly cut down, Ordnance estimates continued on the upgrade. The Empire expanded and there were more depots abroad. On the other hand some were consolidated at home as facilities for transport, canals, and then railways, came into being. The figures for four years were as follows :

	1796	1828	1835	1849
Great Britain	34	46	33	35
Ireland	?	17	9	10
Abroad	20	35 ¹	39	47
Total		98	81	92

To feed all these depots freighting became an important matter. A superintendent of shipping had been created in 1777, one of his main duties in time of war being to examine all vessels hired to see that they were well found ; for under the charter party agreement the Board had to compensate the owner with the full value of any ship captured or sunk by the enemy. The

¹ Fifteen in the West Indies (including Demarara and Bermuda) ; 9 in Canada and Newfoundland ; 3 in Ceylon ; 4 in Africa at Cape Town, Simon's Town, Sierra Leone and Mauritius ; and 4 in the Mediterranean at Malta, Gibraltar, Corfu and Zante. Ireland had a separate establishment up to 1801.

Board also began to own craft of its own for coastwise freight, specially fitted for the conveyance of powder. This was the more necessary when steam began to replace sail. Sailing vessels were employed as being less dangerous.

Waltham Abbey became a Government factory in 1787 when a privately owned powder mill there (Mr. Walton's) was taken over by the Ordnance. In the same year a powder factory was set up at Ballincollig, which was closed down in part in 1834 and totally in 1857. When the Ordnance absorbed the Storekeeper General it took over his establishment in Tooley Street as an adjunct of the Tower, and used it as a storehouse for camp, barrack and hospital equipment, army greatcoats and clothing for miscellaneous services, until 1836. By that time the surplus stocks left after Waterloo were eaten down and what was left was transferred to the Tower. While that depot remained the main centre for all supplies of a general character, it was at Woolwich, where the Ordnance Factories were located, that artillery and engineer equipments were held, and where the clothing of these two regiments was received, examined and distributed. Woolwich began to rival the Tower in importance. It was more convenient for shipping large and heavy articles such as guns. The subordinate Deputy Storekeepers, one to each Factory, were abolished and a Storekeeper appointed to hold stocks of all natures. The title of this establishment was changed in 1805 from Tower Place to Royal Arsenal, on the occasion of a visit from George III; and in 1806 the Arms, Crest and Motto of the Board of Ordnance, which it had borne for a long time past, received official recognition.¹

In 1804 the Board of Ordnance began itself to finish muskets, but the work was confined to rough stocking and setting up barrels bought from private firms in Birmingham. In 1807 a factory was acquired at Lewisham to provide barrels and locks, which was moved four years later to Enfield. This was also employed for making swords and rifles but was a very small affair. When we

¹ See Appendix II.

set about converting our flint-locks into percussion muskets in 1839 the service was carried out at Enfield, and by private firms at Birmingham, the work of each place being supervised by an Inspector of Small Arms, a post then created, and at the same time the ancient post of Master Furbisher at the Tower was abolished.¹ Enfield, however, only blossomed out into an important factory in 1853 when the Enfield rifle was introduced and manufactured there. Its *raison d'être* was to act as a check on the price and quality of what was supplied by contract.

A depot in the Midlands was wanted in which to collect flint-locks dealt with in the Birmingham district, and reissue the new percussion muskets; and Weedon, where Ordnance barracks had been erected during Wellington's wars, was selected as being most centrally situated and having the required accommodation.² This conversion gave the Ordnance a chance to see how arms in use by the troops fared; and in 1843 the Master General directed the attention of the Commander-in-Chief to the bad treatment they received. The result was that armourer sergeants, who were enlisted regimentally, were ordered to be instructed and passed at Enfield. Here is to be found the genesis of the armourers' section, Royal Army Ordnance Corps.

The industry of making firearms, which for centuries had been confined to the neighbourhood of the Tower, was at this time shifting to the Birmingham district. It was still really in the hands of individuals, each of whom turned out his own work to his own pattern, so that musket parts were not interchangeable. If a component broke the regimental armourer had to make a new one.

¹ It is curious how long some of these old titles survived. There was a Master Gun-Searcher at Devonport till a few years ago.

² The following is an extract from *The National Register* dated 27.6.1808:

"We learn from undoubted authority, that Government is about to establish an Ordnance depot at Weedon in Northamptonshire, of extraordinary magnitude and importance. As also barracks and accommodation for several brigades of artillery. The central situation of Weedon is the cause of its being selected for this purpose, the measure being connected with other plans for the internal defence of the country."

Assembling was a distinct trade ; and the contractors from whom the Board bought its arms were little more than middlemen. If any piece was rejected it was the armourer who made it, not the contractor who assembled, who had to bear the brunt.

There had been a shortage of walnut for making musket stocks in the war and Ordnance depots were planted out with walnut trees, just as the yew tree had been cultivated in bygone times in churchyards for making bows. There was recently (and may be still) an avenue of walnut and alder (for making charcoal for gunpowder) at Purfleet, and there is a splendid avenue of walnut trees at the village of Appleshaw in Wiltshire which is said to have been planted during the Napoleonic Wars.

Wellington was Master General from 1818 to 1827 when, after an interval of five months during which he held the post of Commander-in-Chief, he became Prime Minister ; and he infused fresh vigour into the rather torpid arteries of the office. He favoured the plan by which the various officials were to meet periodically for discussion ; and worked in harmony with the Commander-in-Chief's office, consulting the Quartermaster General where questions of camp equipment were concerned and so forth. During his tenure of office the Board was once again a real live affair with conferences and discussions. But no sooner did he vacate the post than it drifted back into its old bad habit of leaving everything to subordinate permanent officials.

There was bound to be a tendency for this to happen. For one thing the Board had moved to an office in Pall Mall owing to lack of room at the Tower. For another the duties of the members were largely political, and one or more had to be in Parliament to deal with estimates, speak in debates and answer questions, changing with every change of ministry. It never numbered an artillery or engineer officer among its members, though the navy was often represented. Wellington had made it a practice to sign or initial papers. Now they were merely endorsed

by the Master General's Secretary "the M.G.O. concurs." Virtually the Master General ceased to be President of the Board. As Commander-in-Chief of the two Ordnance Corps he was responsible for their efficiency, but took little part in the business of the office. He rarely if ever attended a Board meeting, alleging that matters could be more freely discussed in his absence. There were supposed to be three of these a week, but they were merely occasions on which members signed prepared documents without discussion or minutes. One member could transact all the business.

The very year after the Duke left the Board its numbers were reduced from five to three, and the posts of Lieutenant General and Clerk of Deliveries abolished. The Director General of the non-existent Field Train to some extent did the work of the former, his title being changed to that of Director General of Artillery. The latter was replaced by a subordinate, styled Examiner of Store Accounts. With this change power became even more concentrated in the hands of the permanent clerks who moved to Pall Mall.

In its corporate capacity the most important duty of the Board should have been to see how best to lay out the money at its disposal in providing for the land and sea forces. But there was little real co-ordination with a view to attaining this object.

In his individual capacity the Surveyor General was in theory the expert buyer, responsible that everything the Board purchased was correct as to quantity, quality and price. In practice contractual work was delegated to a clerk who decided what tenders should be accepted. The examination of guns and ammunition had long since passed into the hands of the artillery. At the Tower, inspection was dealt with by three clerks of the Surveyor General's office and two under the Principal Storekeeper, assisted by labourers. They were purposely allotted different tasks from time to time to avoid collusion with contractors, and had no technical knowledge of the variety of goods they were called on to deal with beyond what they might pick up in the course of their employment.

The Seal of the Board, affixed to every standard pattern, was accessible to all and sundry. It was a simple matter for contractors to tamper with the subordinate who passed their goods. They had free access to the rooms where the stores might lie six months or more waiting examination, and were constantly at the Tower discussing matters with the inspecting clerk and "persuading" him to pass their goods. At Woolwich matters were rather better. Leather would be viewed by an artillery saddler, ironwork by a smith from the carriage factory. But there was no regular inspection staff at either place definitely and independently responsible for the efficiency of what was purchased. Attention was mainly devoted to ensuring that supplies conformed outwardly to the sealed pattern.

Nevertheless inspection was certainly less perfunctory than in the case of what was provided regimentally. One important point realized was that all woollen goods contain a percentage of moisture and that, if this be artificially increased, the purchaser is buying water instead of wool. Leather was rejected on occasions as being improperly tanned. It never occurred to the A.A.G. and A.Q.M.G. who, under the Board of General Officers, examined the soldier's uniform and boots that matters such as these deserved attention.

According to the letter of the law, the Principal Storekeeper was liable in his person for the safe custody of all stores committed to his care. He was still required to furnish a bond for £5000 that the Board might be indemnified in case of loss by malversation. In reality the executive charge of stores at the Tower was in the hands of subordinates. In fact when, a few weeks before the outbreak of the Crimean War, his title was changed to that of Controller of Stores and Principal Storekeeper, it was as Controller and not Storekeeper that he was ordered to be addressed.

The responsibility of the Examiner of Store Accounts was not exactly defined. Besides dealing with the accounts of outstations he was expected to review the demands of the Principal Storekeeper, on the grounds

that it was improper for anyone to approve a demand without independent check. This was a duty that by rights appertained to the Board as a whole. He was also supposed to keep a watchful eye on all transactions relating to small arms, under the old formula which required their recipient to enter into indentures with the Master General for their safe custody and eventual return. There was still a very elaborate ceremony to be gone through before arms were issued to troops at home. The Commander-in-Chief had to approach the Secretary-at-War who applied to the Secretary of State for Home Affairs. The latter obtained the signature of the Crown to a Warrant which was then forwarded to the Ordnance Office. Abroad, however, the General in command could sanction the issue, but had to report his action at once.

The establishment of a Corps of Sappers and Miners led to an increase in the number of engineer officers, so that the post of Clerk to the Survey at outstations gradually disappeared, and the Clerk of the Cheque became a Deputy Storekeeper. As bonded accountants he and the Storekeeper were jointly liable for any deficiencies and were supposed to act as checks on each other. They started life as subordinate clerks in the main offices at the Tower or Woolwich; copying letters and returns, indexing and so on. At very small stations there was only a Deputy, who might act as Barrackmaster or vice versa; and sometimes, as in Canada, several Deputies at places apart were under one Storekeeper.

The Barrackmaster's lot cannot have been a happy one. In 1838 a set of barrack regulations was published which contained some 40 pages of schedules and orders for the army, and 400 of rules by which the Barrackmaster's conduct was to be regulated and of returns to be rendered to the Board. These very precise injunctions were needed owing to the fact that he was only a minor official owing allegiance to a shadowy and far distant Board; and was apt to be bullied by the authorities on the spot. In 1827 Wellington issued an order that any reports the Barrackmaster might have to make were not to be called

for by the General. At one station he had found a deficiency of £3000 worth of barrack stores which had been misappropriated. It was abroad and by officers that this speculation chiefly occurred. Accommodation in barracks was slightly improving. Officer's messes, cookhouses, canteens, hospitals and schoolrooms were beginning to be catered for in the schedules, but not married quarters. Wives and their families had to be content with a curtained-off space in the barrack room, the number of women allowed by regulations being six per hundred men. Indeed the soldier was still shamefully housed and his canteen was nothing but a low-class drinking shop selling the vilest liquor at an exorbitant profit. The Barrackmaster allotted accommodation to incoming troops and handed it over with the utensils on inventory. There were price lists for all articles and periodical surveys with a view to charging for damage or deficiency. Proportions were also laid down to govern the stocks held by the Barrackmaster : one bedstead for every hundred in use, one pair of bellows to every four men and so forth. Like the Storekeeper, the Barrackmaster had to find securities for his honesty.

Such changes in the interior economy of the Ordnance Department as remain to be chronicled owed their beginnings to the time when the Duke was at its head and reflect his vigorous administration.

In 1823, volumes of Ordnance regulations appeared for the first time, one for home, and the other for foreign stations. To a large extent these are merely collections of existing circulars and forms bound together. As in the past, Storekeepers at home were "not to deliver out or issue any of Our stores of what nature soever under their charge, without the order of the Master General or Board, grounded either upon Warrant from Us, our Privy Council, or Letter of our Lord High Admiral or Lords Commissioners of our Admiralty for the time being"; and nothing was to be taken in without an order from the Board unless in case of great emergency. Abroad however the Storekeeper was authorized to

issue or take in stores under orders of the senior naval officer, general officer commanding, C.R.A., C.R.E. or Respective Officers.

By 1855, when a new set of regulations appeared, further decentralization had occurred. The Storekeeper at home was empowered to issue stores when necessary under orders from the naval or military officer in command at the station, reporting the matter to the Board.

These regulations contain the following quaint instruction published in December 1848. "The applications of noblemen and gentlemen, owners of private yachts, requiring to be supplied with arms, ammunition, &c., from the Ordnance stores, shall be at once complied with by the Ordnance officers on the spot, without the delay of a previous reference to the Master General and Board. All such supplies are to be paid for according to their value with an addition, at 15 per cent, for departmental expenses ; and all issues so made are to be reported to the Master General and Board." Seeing that we were at peace with the world and not fitting out privateers, and bearing in mind the formalities which from time immemorial hedged round any issue of arms, this authorization to part with them to private individuals, without even the authority of the General at the station, reads most curiously.

I can only guess at the following explanation. A revolution had just broken out in Rome, whence the Pope had fled to Naples. Mazzini, its leader and inspirer, had lived for many years an exile at London, where he had many friends in high places who wished the movement for Italian freedom and unity well. It seems just possible that this order was an underground way of allowing arms and ammunition to be shipped out of England to assist Mazzini.

From this digression I return to the regulations of 1823. Wellington introduced a radical change in the system of book-keeping. He abolished store ledgers entirely and replaced them by balance sheets giving total quantities only, the details remaining, as in the past, in the journal, the book of first entry. Each month the

journal and balance sheet were to be checked by the Respective Officers and sent to the Tower for audit with the supporting vouchers. But the experiment failed, perhaps owing to the labour of striking a balance so often, and five years later ledgers were reintroduced.

By 1855 the procedure was as follows. Each Ordnance station had its ledger which was to be posted weekly from the journal and balanced on the 31st March. At the largest home stations, Woolwich, Chatham, Portsmouth, Devonport and Cork, a balance sheet was then sent to the Tower ; the ledger itself being only furnished when called for. Elsewhere a transcript ledger giving all details was sent in, accompanied by authorities and vouchers.

A more important and enduring matter was the institution, under the Duke's regime, of a systematic method of framing demands. Hitherto nothing had been legislated for in this way beyond consumable stores such as nails, paint or putty—the “petty emptions” of old Warrants—which the Respective Officers were allowed to expend as needful. The account being submitted annually there developed from this custom a yearly demand for such items. Lists were also sent in showing what else was likely to be wanted in the ensuing year, but these lists were not prepared on any accurate or uniform basis.

The first step to put matters on a better footing occurred in 1818. The yearly lists were to be accompanied by statements showing the issues of the previous year, and for home stations it was ordered that two years' stock be provided for. Four years later a more cut-and-dried plan was introduced. The heads of the various departments, military, naval and civil, served by the depot, were each to prepare an annual estimate of their wants. These estimates, after consideration by the Respective Officers, were to be submitted to the Board on printed forms giving the following information—the proportion fixed or proposed to be maintained, the unappropriated serviceable stock, the number of years the article was expected to last, the last year's issue, the

quantity required, and the local price of anything obtainable on the spot. There was also a column in which to explain any abnormal circumstance. The documents were to be accompanied by lists of what was repairable or unserviceable with appropriate suggestions for their disposal, and were due in London on the 31st October.

After a while the figures were consolidated in one demand which included the Storekeeper's consumable stores. The document gave the fixed proportion (where one existed), the issues for the previous year (later the average for three), and had columns to show what was demanded under each estimate. Sufficient was to be provided for three years at the Cape and in the Far East, for two in the West Indies and Mediterranean, and for one at home. A surplus list was rendered every three years.

Thus did an annual demand and surplus list come into being.

The plan was very well in theory, but the difficulty must have been to know what the figures should be. It must be remembered that equipment tables were unknown. Armaments were what they happened to be. Even the equipment of horse and field batteries was what had been scraped together, hardly two alike. Apart from barrack stores the sole scale was that of small arm ammunition for practice. A scale of field equipment there was, but it was little more than a war scale based on the experience of Wellington's campaign, as there were no camps of exercise and training for war hardly existed.¹ In Canada it was even proposed to dismantle the forts and put their guns under cover to preserve them from the weather. Except at Woolwich, where firing sometimes took place across the river, there was no gun practice. An artillery range did not exist till Shoeburyness was acquired in 1847 for experiments.

¹ The scales are shown in Appendix VIII. Besides small arms and ammunition the only items supplied by the Ordnance to the army were a portable armourer's forge and chest of tools per regiment, trumpets, bugles and drums, leaping bars and practice posts for cavalry.

There was no distinction between what was expended on upkeep and what for new services. It was well-nigh impossible to say how long any item would last. In short there was nothing to serve as a basis for the figures, and the Respective Officers simply fixed the proportions at what they had or would like to have. There were large accumulations of war surpluses. These would be taken as the ground work and each year a demand submitted to maintain the original figure.

In 1832 the Board discovered that this was extravagant and issued a long rigmarole circular enjoining economy so as to keep its expenditure at the lowest figure consistent with the good of the service. While the Respective Officers were to exercise a wise foresight, "the experience of some slight degree of inconvenience from the want of certain stores will in general be a better indication of the propriety of demanding them than any theoretic views of what ought to be in store, to be in readiness for possible emergencies." Excessive accumulations of articles liable to deteriorate or to be superseded by improved patterns were to be eaten down or returned to the Tower instead of being maintained at the existing figure by fresh demands. In this way there should result "a practical proportion, varying with circumstances, and not subject to the objections which apply to fixed proportions of a theoretic character."

But the Board was missing the reality and pursuing shadows. It made no attempt to define scales of equipment and say what quantity of powder and shot or what important adjuncts were to be maintained; and the Respective Officers, left to their own devices, continued to fix the proportions as they pleased. Moreover the Board paid small heed to the figures shown in the demands. It supplied what in its opinion was suitable or what it could spare.

No less than four officials were concerned in checking demands. Where there was question of local purchase the Surveyor General gave the decision, his being the branch that dealt with contractual work. The Examiner of Store Accounts was expected to scrutinize them as

regards expenditure by the figures shown in the previous station accounts, which it was his business to check. In so far as stock was concerned the Principal Storekeeper was supposed to use his practical experience. Lastly the Director General of Artillery took a hand in the work. "Supposing there is a demand under any head for 2000 tubes and we think it an excess, we write off 500, we write 500 in red ink opposite to that. . . . We judge what is wanted. . . . We refer to the return of the year before and we can tell pretty much what they want. It is productive of a great saving; I believe I should not be wrong if I said that what is struck out is a saving of some thousands a year."

In 1849 Parliament appointed a Commission to enquire into the management of the Board of Ordnance, whose estimates continued to increase despite all efforts to keep them down. They amounted in that year to £2,898,000, whereas in 1828 the figure had been £1,959,000.

The main object of this Commission, of which Mr. Cobden, the great apostle of free trade, was a member, was to secure economy. It laid great stress on the ample manufacturing resources of the country and questioned the necessity of having Ordnance Factories. It suggested that Horse Artillery be converted into Field Artillery and so save expense, Field Artillery only having hired horses and drivers in time of war. It proposed that at small stations, where work was light, military officers and clerks should replace the storekeeping staff. It even went so far as to enquire whether all depots at home beyond the Tower and Woolwich could not with advantage be abolished. Why, it asked, should not ordinary equipment be purchased on the spot as and when required, just as is done in civil life? These speculative enquiries show how preparation for war was neglected. Fortunately they led to no result.

But when the Commission began to examine how the Board of Ordnance transacted details of its business it was on firmer ground. One of the chief points criticized was the entire lack of system in dealing with demands. Ordnance officials talked all round the subject. They

referred in a vague way to "proportions" as if the word possessed some magic virtue that settled everything. But the witnesses did not themselves know what they meant by the term. Sometimes it was used to convey the idea of a fixed stock, and sometimes of an annual maintenance figure. The Commission was forced to the conclusion that there was no one in the whole office responsible for deciding what should be held at any station. It discovered that the amount of gunpowder in Canada equalled the whole of what was expended during the last two years of the Napoleonic Wars, and that some of it had been there fifty years. The C.R.A. had recently tested it: he had condemned a portion and pronounced the rest to be quite serviceable.

The result of this enquiry was that the Board of Ordnance did at last bestir itself. It laid down the amount of powder, shot and other important articles to be held and directed that the quantities were not to be exceeded.

It is now a commonplace that the efficiency of a store-keeping business is based on accuracy in providing. Unless this foundation is secure the whole superstructure falls to the ground and all efforts to bolster it up must fail. Owing to the complexity and variety of the equipment of a modern army "Provision" (to use Ordnance nomenclature) is an extremely intricate affair, and in the absence of scales and statistics it would be impossible. Although it cannot be said that anything approaching accuracy had at this time been attained, yet in these efforts, initiated by Wellington, are to be found the germs of our modern system. That is to say scales were drawn up for a few important items and replenishment was, at any rate to some extent, on the basis of average expenditure.

Another point on which this Commission commented was that the lack of an efficient stocktaking led to the conservation of stocks of antiquated pattern and subject to deterioration. Here again it hit the right nail on the head.

After Waterloo there were very large accumulations of camp equipment, entrenching tools, harness and other articles. Much was sold and the rest kept in case it should be again wanted. A few reserves were built up, 500 sets of four-horse team harness, camp equipment and field tools for 57,000 infantry and 8000 cavalry. But expenditure in peace was negligible and there was no turnover. What had been hurriedly got together for Wellington's campaigns, of all sorts and sizes, remained in stock hidden away and ill-cared for wherever accommodation was to be found.

When the artillery took over from the Surveyor General the duty of proving guns and ammunition, it built up a nucleus of officers who knew something of that work. These were posted to a few colonial stations with the old title of Firemaster. A certain number of gunners also went through a course at Woolwich Laboratory. There was thus some slight assurance that gunpowder was serviceable.¹ But beyond this there was none.

By the letter of the law the stock at every depot was supposed to be surveyed yearly either by the Respective Officers, or by the Surveyor General's clerks from the Tower. In reality the operation was undertaken no more often than once in three years and was a formality. The Surveying Officers were to satisfy themselves that the "apparent numbers or quantities" corresponded with the figures expressed in the list furnished by the Storekeeper. It was only if they felt doubt on this point that they were to resort to counting, scales or measure. There was no examination as to condition unless specific articles were produced to the Board of Survey with a view to their condemnation.

A complete stocktaking was only attempted when an outstation Storekeeper was relieved of his charge. It was contended that nothing more was necessary. If anything was then found missing the Board would be indemnified to the extent of the Storekeeper's bond. In practice, however, the public paid for such losses.

¹ The very primitive method of test is described in Appendix V.

Sometimes the discrepancies brought to light at these surveys and remains were very heavy. At Jamaica there were 940 discrepancies, at Dublin 1336, but in every case the explanations were said to be satisfactory.

Another result of this Commission was that the Board ordered a stocktaking every five years, though a task of such magnitude was never attempted at the Tower and only once at Woolwich. There it took eight months, furnished employment for four clerks and forty labourers, and led to the discovery of an immense quantity of old and useless gear.

Wellington's last act before relinquishing the post of Master General was to draw up Ordnance field service regulations founded on the experience of the late wars but amplified to embrace the extra duties since assumed by the Ordnance.

Control was to be vested in Respective Officers, the C.R.A., C.R.E., and principal Field Train officer, who were to be jointly responsible to the Board of Ordnance. But they were also to pay due obedience to the military commander of the force and to demand nothing except under his orders and were thus subject to a dual control; an objectionable feature inevitable so long as the Office of Ordnance was independent of the army. On questions of small arms and small arm ammunition they consulted the Adjutant General; on those of camp equipment the Quartermaster General. They were to point out to the latter what they conceived to be suitable store-houses, convenient for water and road transport, and to establish such advanced depots as were needed.

Equipment was divided into three categories, each to be kept separate, and each under a Commissary of Ordnance. One consisted of hospital and medical equipment. This was simple to deal with, the Commissary was merely to take charge of what was sent out, and issue in bulk as required by the medical authorities; medicaments to the apothecary, equipment, comforts for the sick and wounded, litters, etc., to the Purveyor who acted as hospital quartermaster, looking after its requisites and the patients' diets.

The next comprised camp equipment and field stores, also accoutrements, boots and shoes, socks, shirts, etc.; in fact anything needed for general army use. The Commissary was to be furnished once a quarter by the Quartermaster General with returns of camp equipment in use, showing what was missing and saying if it had been paid for. He was to make appropriate suggestions to the Quartermaster General with a view to preventing waste, and the Respective Officers were to inform the Board what action resulted. Clothing and necessities issued to the troops were reported to the Paymaster who recovered their value.

The third category consisted of artillery and engineer equipments, ammunition and small arms. Requisitions for small arm ammunition were to be countersigned by an officer of the A.G.'s Branch. Unless in the hurry of action, nothing was to be issued without an order from the C.R.A. or C.R.E. When articles required replacement sooner than might be expected, the Commissary was to cause enquiry to be made, and if the result was not satisfactory he was to report to the principal Field Train officer. It was also the duty of this group to take over captured matériel.

The regulations tacitly assume that the Treasury would provide a Commissariat staff to deal with impressments and purchases at the seat of war, for they state that stores so obtained were to be inspected by an Ordnance Commissary. The instructions are naturally silent as to the part to be played by the Commissariat, but the line of demarcation between the two departments contemplated by Wellington is evident. The Commissariat would be responsible for food, transport and purchases effected locally; the Ordnance not only for munitions but for the duties it took over after Waterloo from the Military Storekeeper General and Barrackmaster General. In short it would be the sole storekeeping department of the army both for goods sent from home and those obtained in the theatre of war. But the plan was never subject to the acid test of practical trial. These piping times of peace furnished no occasion for the Ordnance

to deal with anything beyond the very bare allowance of equipment provided by the State in peace.

It was a period of great military inefficiency, which could not fail to react on the work of the Ordnance. It was doubtless not due to the Master General that the Board members were reduced from five to three, or that much of our special war equipment coincided in age with our last campaign. The Board would no doubt have been glad to buy new had it possessed the means. The Ordnance had to cut its coat according to its cloth. Yet in the instructions laid down in the reign of Charles II, it possessed such a well-designed piece of machinery that, although some important parts were broken and others rusty, it continued to function smoothly in peace. Once intended to work only at the Tower and a few outlying places round the coast of England, it had extended its ramifications to every corner of a world-flung Empire. To meet these changed conditions the Respective Officers had come into being to whom a measure of responsibility was granted ; and they provided the lubricant which kept the machine running smoothly in far distant parts.

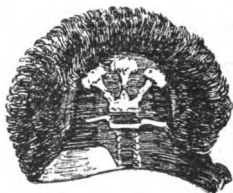
CHAPTER X

DETAILS OF UNIFORM, EQUIPMENT AND ARMS

DURING this period the tendency, so noticeable in the middle of the eighteenth century, to rig the soldier out in fancy dress reached its climax. Only since the Crimean War has uniform become more practical, and it was reserved for this century to garb its troops in a really workmanlike way suited to warfare.¹

The first change occurred when peace was declared with the United States in 1783, every battalion being given a Light Company whose uniform was modelled on that worn in America. The coat was cut short and the headdress a black leather skull cap. Thus each battalion had on the right flank a Grenadier Company of stalwarts, and on the left a Light Company of active lads. Each had its peculiar headdress and wings; and just as the grenade was the symbol of the former, so a bugle horn with the colour green distinguished the latter.

Light Cavalry uniform was remodelled at the same time. The coat was replaced by a short jacket which had an entirely new style of lace embroidery. The colour was changed from red to blue, the waistcoat converted into an ornamental sleeveless shell, and breeches were made of leather instead of shag (plush). Metal helmets were superseded by others of



¹ To avoid overloading the text with details which, nevertheless, may be of interest to some now that military pageantry is so to the fore, a number of footnotes are inserted. The general reader will do well to ignore these.

japanned leather with metal peak, which carried a crest of fur running fore and aft. It was the custom when new helmets were issued to remake them by putting the old fur under the new, so that in time these bolsters developed into gigantic excrescences while the turban became a fillet permanently bound round the base of the headdress.

At this time the infantry gaiter began once more to be of wool instead of linen, and was shorter and without a stiff top. The coat tended to diminish in volume, the collar grew higher, and a new fashion of neckwear appeared in place of the neckcloth. This was the stock, a black leather band bound round the neck and fastened behind by a clasp.¹ An order of 1776 had directed that hair in the infantry be worn "in the manner called clubbed," that is tied together in a knot with a ribbon at the



Light Infantryman.

nape of the neck. This fashion was replaced by the pig-tail, in which the hair was made into a tight plait, the end of which was inserted into a sheath or queue, to which it was fastened with a rosette. To prevent the coat from getting soiled, a patch or "flash" was attached to the coat collar at the back.

¹ This new article of dress was formally introduced in 1791 ; but, as in so many other cases, official sanction lagged far behind regimental practice.

These modifications bring us down to the French Revolution which, among far more important results, was responsible for a radical change in male attire, the fashion of which was set by Paris. The time-honoured and picturesque knee breeches and wigs or powder began to be replaced by long leg-wear and natural hair. This was a direct by-product of the times, a slovenly appearance being deliberately cultivated as an outward symbol of democracy, an indication that the wearer had more important affairs to attend to than the adornment of his person.¹

Though powder was used by the upper classes, the soldier had to be content with flour rubbed into his long hair with grease. The custom was disgusting and the soldier's head a whited sepulchre. "Never shall I forget," wrote General Mercer, apropos of church parade at Woolwich, "the stench emanating from so many filthy heads crowded together in the low rooms where service was performed—of course especially in hot weather." Yet though a tax on hair powder soon put an end to the fashion in civil life, several years elapsed before the army changed its style of coiffure, and then only owing to the exigencies of active service.²

Trousers developed on two distinct lines which approached but did not actually meet. On the one

¹ "At this dinner according to custom most of the Deputies, especially the younger ones, were dressed *au polisson*, many of them without powder in their hair, and some in boots: not above four or five were neatly dressed. How times are changed!" *Travels in France and Italy*, Arthur Young.

² Queues were abolished for flank companies in 1799, but it was not until 1808 that they disappeared for others. Even then the order was only intended to be of temporary application, though never rescinded. The reason given was the necessity of being ready for immediate service. Heads were to be kept clean by combing, brushing and washing; for which purpose a small sponge was to be provided in place of one of the two combs which the soldier needed when he wore powder. It was no doubt owing to this change that a nightcap ceased to figure among the necessities of the cavalryman in a clothing warrant of 1812.

"The rank and file had tin cases over their pouches for carrying their night cap in." Inspection Report 9th Regiment of Foot (The Norfolk Regiment), 1798.

hand knee breeches grew longer and were cut more after the manner of modern riding breeches, these pantaloons being first worn by Light Infantry. Trousers are described as gaiter trousers, or trouser breeches, next as open trousers, and were no doubt originally merely pantaloons extended to the ankle. On the other hand overalls appeared, which, as the name implies, were at first loose-fitting garments worn outside the breeches for protection and warmth. By the end of the century linen trousers were to be found in the West Indies where attention to details of dress was less meticulous,¹ and in 1811 pantaloons and trousers were extensively adopted on service.² But these innovations were strictly discountenanced at home, where white breeches and black gaiters remained *de rigueur*. The only concession was that loose overalls of unbleached linen were allowed to be worn over the breeches on the march or for night duty.

Cavalry leg wear underwent many modifications about this time, until finally, in the year of Waterloo, there was a general instruction for all cavalry to don overalls, by then smartly cut with a stripe of the regimental lace down the seam, and these were worn by all mounted troops whether on horse or foot until long after the Crimea. There were corresponding changes in the style of cavalry footwear: jack-boots being eventually replaced by half-boots worn under the overall, but much shorter than the modern Wellington.³

In 1797 there was a very marked change in the style

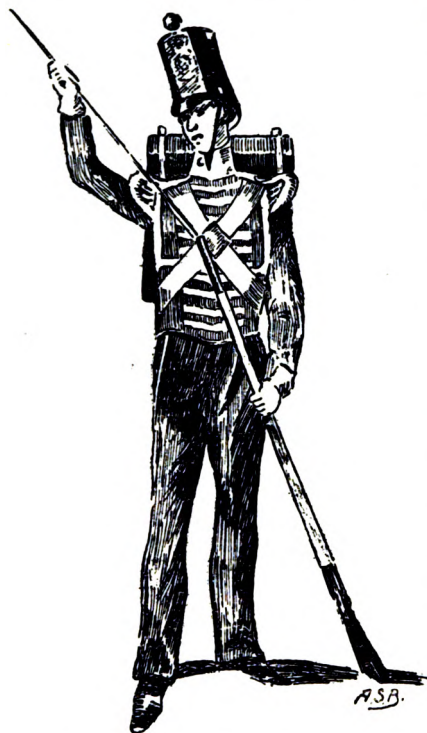
¹ "Regiment appeared in linen waistcoats and long trouser-breeches of the West Indies." Inspection Report, 14th Regiment of Foot, 1791.

² One order of that year sanctions the use of grey pantaloons and short gaiters by troops in Spain and Portugal. Another recommends the use on service of grey cloth trousers in place of breeches and gaiters, as they left the knee joint and calf unconfined and so were better adapted for marching. The long gaiters were said to produce sores.

³ In 1796 there was a definite order for all heavy regiments to wear plush breeches cut very high. In 1807 milled kersey was made optional. In 1812 pantaloons were sanctioned for all, heavy or light, in the case of men on service or at the depot; for the former they were to be of leather, while grey undress overalls and white stable trousers were introduced as necessities.

"In watering order the men wear Russia-duck trousers. Overalls are not in use in the regiment."—Inspection Report 2nd Dragoons (Scots

of the infantry coat. Lapels disappeared and the bars of lace were transferred to the body of the garment,



which was made to button up and given a stand-up collar. This coatee, as it was called, was cut off short at the waist except behind where the tails remained.¹ The waistcoat no longer showed, and the Clothing Board had little use for anything that was not ornamental. Instead, the marching soldier was served out with a yard of rough kersey and a dozen buttons. But the complete sleeved article was brought in again in 1803. It was essential on service as a fatigue jacket.

The Highlander's voluminous plaid and kilt combined had been replaced by a smaller kilt fastened round the waist, above which was the ordinary infantry coatee. But abroad and

Greys), 1802. "Men's debts very high owing to overalls. Cost in this regiment at least 28/-."—Inspection Report 13th Dragoons (13/16th Hussars), 1804. As a result of the experience of the campaign of 1794 in the Netherlands, jack-boots were made stronger with stiff tops. They were to be cut high at the point of the knee and hollowed out at the bend of the leg, shod at the heel and nailed at the toe. With the advent of pantaloons, jack-boots were discarded for Hessians, a foreign fashion. These only reached to below the knee, and were higher in front with a V at the top. The Household Cavalry, however, kept their jack-boots and leather breeches for State occasions.

¹ It was the practice to decorate the wings worn on the shoulder by men of flank companies and Fusiliers with a hanging fringe, and the shoulder straps of others with a smaller tuft. They were of different

on service pantaloons and trousers were often worn. The sporran was bigger, as was the bonnet with its high diced border, hackle plume and feathers, the same dress being worn by all companies. Hose were still of cloth, shaped to the leg and often without feet; and the Highlander's spat gaiter was introduced to cover the hiatus between hose and shoe.¹ Although the trews or "truis," made from tartan cut on the bias and fitting close to the leg, is another old-time Highland dress, I have failed to find that the modern military trews are directly descended from this ancient Scottish costume. The Highland soldier was served out with so many yards of tartan to make himself a kilt and his trews were at first merely trousers made from this material when the kilt was discarded abroad. Indeed so unused was the Highlander to anything except a kilt that it is said



colour and each regiment had its own pattern. This hitherto unauthorized custom was officially sanctioned in 1814. A few other miscellaneous changes during this time were as follows: The trumpeter, like the pikeman of the reign of Charles II, wore a coat of the colour of the regimental facing, owing to which he was a conspicuous target. In 1811 regiments were authorized to dress their trumpeters and buglers in coats of the same hue as those of the rank and file. Chevrons were introduced for non-commissioned officers in 1802; crowns and stars for officers in 1809.

¹ "I may here observe that in performing this journey (Aberdeen to Leith) I wore a sort of hose called 'moggans'; these are hose from which the feet had been cut off; the spats cover the deficiency, and the legs appear as if the under parts were complete. This is an excellent method of hardening the feet so as to accustom them to bad shoes and bad roads. I afterwards observed on joining the regiment that very few of the men wore any other kind although they had complete ones in their possession." *Diary of a Highland soldier, 1801, quoted in the Historical Records of the Cameron Highlanders, Volume II, page 264.*

he was apt at first to put his trousers on wrong side foremost.¹

The Rifle Corps was born in 1800, and the rifleman was given a uniform of his own, the only one designed with a view to concealment. The coatee was dark green and worn with blue pantaloons, exchanged later for dark green trousers. A helmet in place of a plain leather cap (superseded almost at once by a chaco) was the sole distinction of the officer, and a whistle that of the sergeant. Buttons were dull and all ostentatious ornaments avoided. This was essentially a Light Infantry Corps, it had no flank companies with a distinctive uniform.



Rifleman.

Of the Artillery it may be said that the Horse dressed in light cavalry style, and the Foot like *the* infantry, only the coat was blue.²

The uniform of the

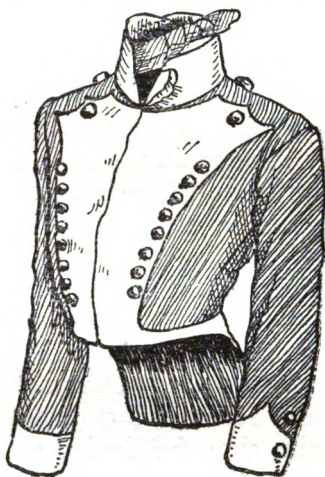
¹ There is no official mention of "regiments wearing the trews" prior to a Clothing Warrant of 1834, though something of the sort had been worn then for some time past. The earliest instance I have come across is in the records of the 91st Argyll Highlanders, which state that the regiment was ordered, in 1809, to make the material for its kilts up into trews.

² Writing of the year 1804 General Mercer describes his first Horse Artillery jacket as resembling "a furze bush in full bloom, for it was one mass of gold from the collar to the sash. No great space after all for the

Sappers and Miners also resembled that of the line. When first raised at Gibraltar in 1772, their coats were red with black facings. Later the body colour was changed to blue, like that of the other regiment commanded by the Master General, but in 1811 the process was reversed, so that the men should not be conspicuous when working among infantry.

When the infantry coatee was introduced, the cavalryman's coat was modified in a similar manner, being made to button up in front with a stand-up collar. It bore row upon row of lace and buttons until 1811 when these were generally scrapped in favour of hooks and eyes. The light cavalryman was then given a jacket with minute tails and with wide lapels turned back as in the modern Lancer tunic.

It was also in 1811 that certain Light Dragoons were re-christened Hussars, with an entirely new style of uniform. The Hussar is of Slavonic origin, and in bygone times was a barbaric horseman who lived by raiding and probably dressed in the skins of animals, as fur was a particular feature of the costume, which was by now strikingly handsome. The jacket was very richly laced and edged with fur. The headdress was a fur cap with red cloth top falling over the side, which must have had the same ancestry as the grenadier cap. In the same way the fur-trimmed pelisse, an imitation jacket slung from the shoulder, was perhaps once a cape



waists were then so exceedingly short that my sash was nearly under my arm. . . . It was then the fashion of the day for youngsters to imitate or try to resemble women, wearing as they did such short waists and filling out the jacket with handkerchiefs to resemble the female figure."—*History of the Dress of the Royal Artillery*, Macdonald. This book contains very full details of the uniform of the regiment.

made from the skin of some animal, which the Hussar once wore round his neck. This also perhaps had its counterpart in the cravats of fox tails at one time worn by the Grenadiers of the Coldstream Guards.

Lastly, in 1815, shortly after peace was declared, four regiments of cavalry were converted into Lancers. The costume selected on this occasion was Polish. The main feature was a gigantic cap with a framework of cane covered with cloth, a square top, a brass plate and immense plumes. This old Polish headdress had once been made concertina-fashion, on the lines of an opera hat, so that it could be opened up to make the wearer look more tall and fierce. Herein lies the origin of the neck of the modern Lancer cap. The officers wore enormous lace aiguillettes, the men aiguillettes of cotton and brass scales on the shoulder.

Among all the articles that go to make up the soldier's uniform there is none to which military tailors have given so much thought as his headdress. The problem of devising something serviceable and at the same time smart is not easy of solution. It was certainly not solved by the blue helmet of the days before the Great War, though it would perhaps be difficult to improve on the white helmet of warmer climates for comfort, appearance and serviceability combined. The rage that existed at this time for devising decorative uniform was expended on the unfortunate soldier's head more than on any other part of his person. The results may have been imposing, as in the case of the Lancer cap, but to modern ideas the military headgear of the period seems better fitted to comic opera. The last thing that can be said is that it was suited to the soldier's occupation.

Exception must perhaps be made in the case of the first novelty that appeared on the scene, a white felt top hat "ornamented and cocked according to pattern" which was introduced in 1787 for the tropics, though, inappropriately enough, the colour was changed four years later to black.¹ In the last decade of the century a

¹ The hat was six inches high with a false lining and four-inch brim, bound round with black lace and bearing a cockade.

hat of this sort was worn by Artillery and Engineers, at home and abroad.

But this style of headgear had no military tradition, it was a reflection of the fashion of the age and had a short life. It disappeared in 1800 together with the infantry cocked hat which had been the established headdress of the army for well over a century, though the manner of cocking had oftentimes changed. The cocked hat was kept only by officers for use off parade and, in place of having a broadside double cock, was worn fore and aft. Moreover it was in shape like a huge bow with drooping ends, so had lost all semblance to the old three-cornered article.



The new infantry headdress was the chaco,¹ worn



Private.



Officer.

universally at home and abroad, though the Grenadier and Fusilier kept his bearskin as well. It was of Austrian origin, a cylinder of lacquered felt with plume, small peak and brass plate in front for the regimental device. Beyond having a peak there was nothing to commend

¹ Although often called a shako the word has always been spelt chaco officially.

it. It was as if the soldier had to balance a piece of stovepipe on his head.¹

In 1811 the chaco was adopted by Light Dragoons in an exaggerated form, very high and large in the crown, with long plume and metal curb chain. At the same time Heavy Cavalry exchanged their cocked hats for helmets with huge bolsters like those previously worn by light regiments. The cocked hat remained only for officers of distinction, such as the general, staff officer and master gunner. The only regiment to resist these innovations was the North British Dragoons (Scots Greys) which continued to wear a bearskin, now of enormous size and encircled with a feather.

It will be noticed that most of the novelties of this time were borrowed from our allies, just as in the past we had copied the Prussians in the matter of strict uniformity. But we also mimicked our enemies, and to this Wellington objected. Apropos of the numerous changes made in that year he wrote in a despatch from the Peninsula in 1811: "I hear that measures are in contemplation to alter the clothing, caps, etc: of the army. There is no subject of which I understand so little: and, abstractedly speaking, I think it indifferent how the soldier is clothed, provided it is in a uniform manner, and that he is forced to keep himself clean and smart, as a soldier ought to be. But there is one thing I deprecate and that is any imitation of the French, in any manner. It is impossible to form an idea of the inconvenience and injury which result from having anything like them either on horseback or on foot. . . . and his piquet were taken in June, because the 3rd Hussars had the same caps as the French *chasseurs à cheval* and some of their hussars, and I was near

¹ In 1806 the chaco was said to have been attended with "inconvenience and prejudice," and was changed for one of felt and leather, apparently unlacquered. In 1811, from the point of view of active service, it was reported to be objectionable as to form, unsteady on the head, and of little use against the weather or sword thrust. The sole alteration was to make it rather lower in the crown, 6½ inches, with the front raised 3 inches, a 2-inch peak, and linen cover as protection from the rain.

being taken on the 25th September from the same cause."

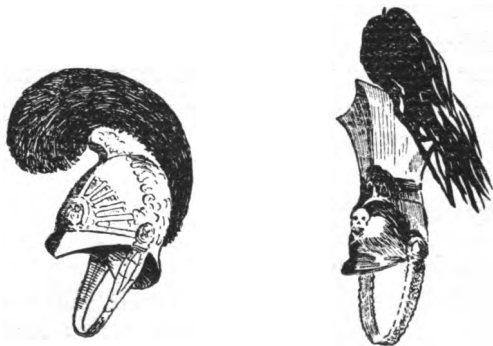
Regiments, however, paid little heed to the patterns sealed by the Board of General Officers. Coats were altered as to cut and decoration when fitted regimentally, especially in the cavalry where clothing was issued in the form of materials. There was an order that any officer who allowed his men to be clothed otherwise than in the established manner was liable to trial by court martial. But it was systematically ignored.¹

It was at this time also that uniform was first recognized as distinguishing the soldier from the civilian. Each of these has now definite obligations in time of war, the fulfilment of which entitle him to certain rights at the hands of the enemy. In bygone times both wore the same style of dress and the only obligation for a combatant was to be properly officered and subject to martial law. But now soldier and civilian were very differently attired and Massena issued an order that all members of the Portuguese Ordonanza (an un-uniformed militia employed by Wellington to harass Massena's lines of communication) should be shot. Wellington protested and wrote to Massena "*ce que vous appelez des paysans sans uniforme, des assassins et des voleurs de grands chemins sont l'Ordonanza du pays, qui, comme j'ai déjà eu l'honneur de vous assurer, sont des corps militaires,*

¹ In 1809 a circular was issued complaining of irregularities such as the wearing of white pantaloons and coats with the tails more cut away than was regulation. It was the fashion then to have a very high waist and long legs. In the following year the Commander-in-Chief found it necessary to call attention to the extreme manner in which coats were cut short at the waist, so that they afforded no protection to the stomach where warmth was so essential; another result being that the waistcoat was so reduced in size as to be useless as a fatigue jacket. It was pointed out that coats were too tight, breeches of preposterous length and stocks so high and constricted that they pressed on the glands of the neck and excited scrofulous swellings. In the same year, after repeated warnings, the Adjutant General wrote to all army clothiers that departure from the authorized pattern was on no account to be permitted; general officers were to inspect clothing on the men's backs, and compare it with the pattern supplied to the regiment, so that there should be no deviation either in material or shape. But these protests bore little fruit.

commandés par les officiers, payés et agissant sous les lois militaires. Il paraît que vous exigez que ceux qui jouiront des droits de la guerre soient revêtus d'un uniforme ; mais vous devez vous souvenir que vous même avez augmenté la gloire de l'armée Française en commandant des soldats qui n'avaient pas d'uniforme."

Despite our long experience of active service at that time, there has never been a period when uniform was so resplendent as in the years that followed Waterloo, none when it was less workmanlike.



Life Guard's Helmet.

17th Lancer's Helmet.

That superlative dandy, George IV, is credited with the saying that in a military uniform a wrinkle was unpardonable, though a crease admissible. At his coronation cuirasses were unearthed from the Tower and supplied to the Life Guards, solely for display, with a new helmet of shining steel and a towering bearskin crest ; and when, not long after, bearskins were adopted by the Foot Guards they were so tall that all the sentry boxes in London had to be heightened. The soldier's coat was so tight in the body and sleeves that he could scarce get into it. It was decorated with rows of lace, wings, tufts and fringes far in excess of what was authorized. The collar was a full three inches high in front and more behind. The musket could only be handled with difficulty ; to sight it was almost out of the question, owing to the stock which pressed like a ligature round the neck. Sword exercise was barely possible ; the overhead cut entirely so, on account of the monstrous

bolsters and plumes worn by the cavalry, and the heavy brass scales on their shoulders which made free movement of the arm impossible. The gigantic cavalry helmets and chacos (the latter often worn on the side of the head) were so unsteady that they could scarcely be retained in windy weather or during a charge, despite the curb chain; and they were provided with lines, so as not to be lost when they toppled off. One cavalry colonel went so far as to ask that his regiment might be reviewed in fatigue caps, as it was quartered at Brighton where it blows more often than not.



Horse Artillery Chaco.



Guardsman's Bearskin.

Sir Walter Scott in *Rob Roy* observes that the present military taste has decorated the Highland bonnet with a quantity of black plumage resembling that which is borne before funerals. The Hussar pelisse was a very coveted distinction. It was adopted by officers of the R.H.A. and Rifles, neither of whom could claim any affinity with the Hussar.

With George IV as Sovereign Chief of the army, petty modifications succeeded each other with bewildering rapidity, and the Adjutant General ceased not to complain of irregularities. It was not until 1830, when William IV ascended the throne, that extravagance began to abate.¹

¹ In 1826 a specification of the infantryman's coatee with small scale paper pattern was circulated and the want of uniformity severely commented on. Copies of the specification and pattern are contained in the Adjutant General's letter book in the War Office Library.

That this order led to little more result than its predecessors can be judged from Appendix X, portions of which have been recirculated since

Yet the Sailor Prince had his own ideas on the subject. He abolished the blue jacket of the Light Dragoon, and made red the universal colour for all cavalry : indeed he introduced red facings for the navy. But these changes did not endure : soon after Light Cavalry again sported blue jackets except one regiment.

Coats remained similar in general style, except that the Light Infantry jacket was replaced by the ordinary coatee.¹ Knee breeches, gaiters, stockings and shoes only disappeared in 1823 when they were superseded by trousers and ankle boots.²

In 1830 the colour of the waistcoat was changed from white to red, as the constant cleaning with damp pipeclay was said to produce a tendency to lung disease. But this change did not apply to the Foot Guards or

the Great War. In 1853 the Horse Guards found it necessary to call attention to the fact that in fitting clothing the common fault was still to make it too tight. "The coarse cloth of which the soldier's clothing is composed is neither calculated to afford satisfaction in wear, nor to preserve its form and appearance if fitted too closely to the person."

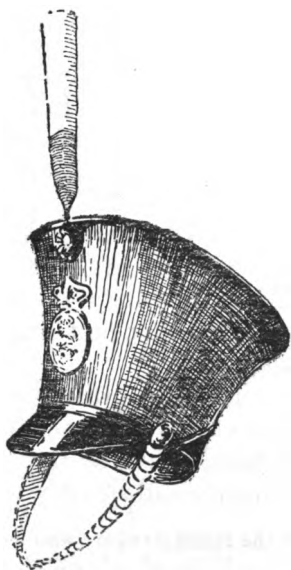
On the accession of William IV, officers' patterns of lace were established. Each regiment was allowed to keep its distinctive embroidery, but it was not to exceed in width the standard laid down. Gold lace was to be worn by the regulars and silver by the militia ; and the officer's gorget, last relic of armour, disappeared. Hair was to be cut close and not worn "in that bushy and unbecoming manner adopted in some regiments." Moustaches were abolished except for Household Cavalry and Hussars. The soldier had for long been distinguished from the civilian by his hirsute appearance.

¹ The bars of lace embroidery on the coatee were all the same length till 1826, when they were made narrower towards the waist. In 1836 the embroidery, of which each regiment had its own device, was abolished for the line and white tape arranged in the regimental mode substituted. This tape was a great source of trouble to the soldier. It had to be constantly pipeclayed, and brushing the coat to remove the white marks soon wore it threadbare. Infantry bands were ordered to wear white in 1830, cavalry bands scarlet in 1834.

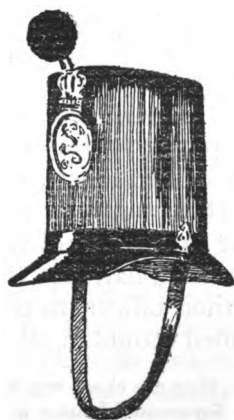
² Boots were for long without eyelet holes, the intention being that these should be pierced to suit the shape of the wearer's foot : nor was it until 1843 that they were made on different lasts for the right and left foot. The shoes they replaced were supposed to be worn alternately on either foot to save uneven wear and make them last longer. The trousers were blue-grey till 1829 when Oxford mixture, a very dark grey, was substituted and they were given a red stripe down the seam in 1833.

Highlanders, and the latter continued to wear shoes and spats.

Meanwhile the loose canvas infantry overalls, originally sanctioned for rough work, had turned into white duck trousers; very smart in contrast to the red coat. Although necessities, they were made obligatory for summer wear in full dress in 1830. Handsome though they looked, they were a bugbear to the man who had to keep them clean. If washed, there was a probability that they would be worn damp, with the danger of rheumatism; if pipeclayed, they became so stiff as to cause sores at the fork. In 1845 the material was changed to serge, and the colour to light blue. But these lavender garments were as unpopular with officers as their predecessors with privates. The colour washed out, and the want of uniformity on parade was unsightly.



Officer.



Private.

During this time it is not to be supposed that head-dresses were neglected. In 1815 the infantry chaco was redesigned and given an enlarged crown.¹ In 1843 a

¹ It was made 7½ inches high with a crown 11 inches in diameter; and the peak, from being horizontal, was sloped downwards.

new type, the Albert, named after the Prince Consort, appeared.

This had once more the same circumference throughout, and had a peak behind as well as before like the modern postman's cap which is a relic of the chaco, reduced in height as in service.¹

The bearskin also changed in form. It became flatter at the top and more forward pointing. The small peak and the plate which bore the device disappeared and it was fur from base to apex. William IV introduced gigantic bearskins with long feathers for the Household Cavalry, but they were soon replaced by shining steel helmets. The sausage-shaped excrescence of the heavy dragoon helmet also disappeared in favour of a steel helmet with sweeping plume. Altogether cavalry headgear was not so top heavy by the time of the Crimea as under George III.

By this time there was also an undress uniform. The soldier originally had nothing beyond his full dress, which he wore on service or such occasions as required his attendance on parade. So long as the troops were scattered about the country in ale-houses no one would have cared much how they clothed themselves at other times. Nevertheless there were refinements insisted on for important ceremonies but dispensed with for occasions of less consequence; and it was these that first created a distinction between full and undress.

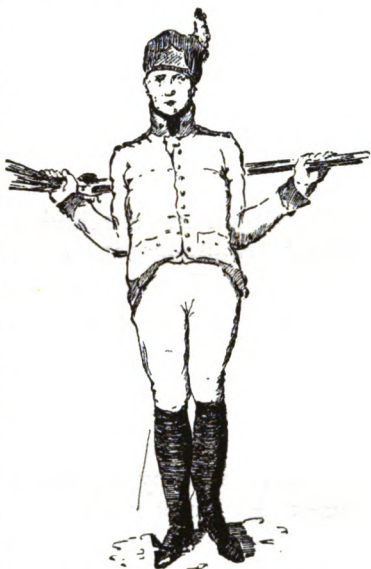
The latter would naturally come into greater prominence when barracks were built and soldiers concentrated with their officers in towns. It would then be important that men should at all times be neatly and smartly turned

¹ In 1827 the chaco was adopted by the Horse Artillery who wore the cavalry fur-crested helmet until then, but this lasted only till 1837 when the R.H.A. exchanged the chaco for a Hussar busby. Other Artillery, Engineers and Light Dragoons wore the chaco continuously; and Hussars and Lancers their distinctive headgear. In 1823 the chaco had been dispensed with as an extra head-dress for the grenadier, but the process was reversed when the "Albert" appeared. After that, the bearskin was worn only by the Foot Guards, being superseded by a sealskin cap in Fusilier regiments.

out. Undress uniform was then what the word literally implies, the waistcoat worn without the coat and with a small cap in place of the regular headdress. Later on the waistcoat, although still so described in official parlance, ceased to be worn under the coatee, which, for one thing, was too tight to admit an under-garment. It became a stable jacket in the mounted services, and a shell or fatigue jacket in the dismounted, being provided with stand-up collar, cuffs and, except in the infantry, an edging of regimental lace. The foraging or fatigue cap was a very rough sort of affair at first, but became pill-box in shape. Highland Regiments adopted the humble or Kilmarnock bonnet, or later, about 1840, the Glengarry, a civilian headdress, devoid of the absurd streamers it had in later years.

Moreover, clothing scales by now allowed some latitude abroad; and advantage was often taken of this fact to give the soldier, when not in full dress, clothing better suited to the climate. This was especially so in India where some regiments allowed their men white linen jackets and trousers, and white cap covers; though some commanding officers set their faces against the custom and distressed their men by compelling them to wear cloth when the heat was almost unsupportable. The privilege, however, was not extended to officers, who had to wear cloth garments buttoned up to the throat, however intense the heat: and at mess the cloth jacket was insisted on.

The East India Company was largely responsible that a more sensible costume was not devised for that country.



Early Undress Uniform.

It adopted for its own white regiments every new uniform introduced for Royal troops regardless of whether it was suited for India or no. Cholera belts also had doubtless come into use there; for when, in 1831, there was a scare of that disease in England, the soldier was ordered to wear (and pay for) a flannel belt.

Similarly some provision was made in North America against the cold. Besides a greatcoat, fur caps and goloshes were introduced as necessities in 1834. "The King's Dragoon Guards . . ." writes an officer in 1853, "wore in Canada a kind of busby with blue pea-jacket and long boots lined with sheepskin in the winter; very good and sensible, and quite indispensable, but assuredly not regulation."

That such an unorthodox dress could be worn, without official comment, shows the trend of opinion. Many began to realize that nothing could be less fitted for the rough work of campaigning than the coatee and chaco, and that different clothing was required for the varying climates in which our army was stationed and might be called on to fight. While there were criticisms, however, they were destructive, not constructive. No one came forward with any definite suggestions as to how matters might be improved. The foppery of the days of Waterloo made persons of sense shy of approaching the subject.

The result therefore was this. Commanding officers introduced such modifications abroad as it pleased them to sanction for ordinary workaday use; but the European full dress, headgear and all, remained *de rigueur* through the Empire. It was a well-established tradition that the soldier in battle should be arrayed in his best, so that he would be the more ashamed to disgrace his uniform.

The Director General of Medical Services at the Crimea did indeed, though rather late in the day, have the temerity to suggest that full dress was ill suited to active service conditions. "The dress the soldier now ordinarily wears," he reports in April 1855, "and the mode

in which he is required to wear it, may not conduce in any very material degree to disease during times of peace when he is neither subjected to great or long exertions nor exposed to a continuance of intemperate and variable weather ; but very different will be the results when, as in times of war, he is otherwise circumstanced. Then its many defects are conspicuous, and it is then that it is found to be suitable neither to high nor to low temperatures. When the former prevails it is found to be oppressive ; when the latter it is unequal to ensure the degree of warmth necessary to the maintenance of health." He points out that at the Crimea the troops are subject to great heat and cold, and recommends that the tightly buttoned red coat be abandoned in favour of a loose jumper of waterproofed material. He condemns the use of black felt bearskins and suchlike which accumulate heat, overload the head, and are likely to produce sunstroke and apoplexy. He suggests that the leather stock be discarded and the throat left free, with a handkerchief round the neck in winter.

But it was the business of no one in particular to deal with such drastic proposals. The Minister of War did not consider it was for him to take action. The matter in his opinion was one for the Commander-in-Chief's office. He was very doubtful whether he had a right to interfere, but he did write to Lord Raglan about the stock, who ordered it to be abandoned and the beard grown, though in one division the order was rescinded a few days later. Said the Commander-in-Chief, "it was impossible, as every military man must know, that you could dispense with the red coat because it was hot." It was out of the question to have two suits of clothing, one for summer and the other for winter. His reply reads that "while aware that a lighter garment would conduce to the comfort of a soldier under a burning sun, he must observe that the troops perform their marches in India wearing their usual uniforms, and the heat there is at least as great as is likely to be experienced in Turkey." All that resulted was the production of some black handkerchiefs. Some white cap covers, as used

in India, had, however, been provided before embarkation.¹

Midsummer madness though it seems, our troops fought all their campaigns in India, down to and including the Mutiny, in full uniform and headgear, the sole difference being that a white chaco cover might be worn, with a flap behind to afford some protection to the nape of the neck. How they survived it is difficult to conceive.²

The space needed for this bare outline (for it is nothing more) has been formidable, but the fact is that the amount of attention devoted to dress was far more than the subject deserved. Changes were incessant, while the soldier's equipment was neglected. It was simple to introduce novelties as clothing was replaced at regular recurrent periods, while equipment was only exchanged at irregular intervals as it wore out. Marlborough may have insisted that the all-important point was that the soldier should have good stout clothes, and Wellington evidently had a contempt for the military dandyism of his age. But these were bright particular stars. The light of lesser luminaries was arrested by externals, the pomp and panoply of war. It failed to penetrate the surface and reveal the underlying fact that the soldier's uniform should be suited for his environment and occupation. On service comfort spells health, a very important point in the winning of campaigns, but one sadly neglected. The individual soldier was quite inarticulate, he could neither read nor write ; and in Wellington's campaigns

¹ Our officers escaped from uniform whenever they could, or modified it in the direction of ease and comfort. This caused somewhat of a scandal among our French allies, and roused the easy-going General Simpson, who on Lord Raglan's death succeeded to the commandership-in-chief, to issue, what was for him a sharp order, in which he pointed out that "sheepskins, buffalo robes, fur capes, long boots and red comforters tend to licence in dress and appearance." It apparently escaped him that they might also tend to warmth.

² "Professor Longmore assures me that the tunics and trousers issued to his old regiment in Bengal during the Mutiny were heavier than those worn in Canada."—Minutes of evidence before a Committee to enquire into the effect on health of the present system of carrying accoutrements, ammunition and kit, 1871.

there was no special correspondent at the front to bring his views before the public eye.

The gathering together of so many armies, each trying to out rival the other in splendour, brought uniform into special prominence during the long struggle with France ; but the epithets " smart and soldierlike " have always been coupled together. The tradition which associates an imposing array with the profession of arms is probably as old as the human race. Among the sober hues of Puritan England the soldier wore a red coat. In Tudor days it was of many bright colours. The craze for display outlasted the spirit of Knighthood. If we knew more about the ancient Briton I do not doubt we should find he took a pride in decorating himself with woad, and that his women-folk admired him when so disguised for battle. Every savage race delights in war paint.

It is interesting to trace the evolution of the coatee. It appears at the Restoration as a workmanlike garment, ample, warm, with roomy pockets, and plain. It ends by being in every way the reverse. Three factors brought about this change and serviceability is conspicuously lacking from among them. In the first place was the change of fashion in civil life, counteracted to some extent by military tradition ; in the next the colonel's desire to save his pocket by skimping cloth ; and lastly his anxiety that his men should be showily dressed.

It is interesting too to see the way in which various accessories developed into mere dummy ornaments, and were retained long after the purpose they were originally intended to serve had ceased to exist, many only disappearing with full dress uniform in 1914.

Sashes were first employed to detect friend from foe.¹ Plumes, feathers, cockades and badges developed from the crest and coat-of-arms of the Knight. The last relic of the tail of the original grenadier's cap is to be found in the bag of the modern Hussar busby. The metal case which carried the match with which the grenade was set alight was worn as a decoration to the belt fifty years

¹ They were at one time made very full to be used as litters for carrying the wounded ; but this was an afterthought.

after grenades ceased to be employed, the infantry sword long after the appearance of the bayonet. The flaps of pockets, sewn down, remained though pockets disappeared; the ornamental patch on the back of the Guardsman's tunic being all that is left of a substantial tail pocket. In the same way the tab of the tunic is the last remnant of the stock. It is long since the cuffs or collar of the tunic were made to turn up or down, yet they retain their distinctive colour, once that of the lining. They are now called facings, but the original facing was a binding to preserve the edge of the coat, and its colour had no connection with that of the lining. Wings, still to be seen on the bandsman's tunic, are described in 1688 as "welts or pieces set over the place on the top of the shoulder where the sleeves are set together,"¹ and were presumably employed to make or hide the seam. Epaulettes were at first knots of lace to keep the sash in place; by the time they became real epaulettes the sash was more commonly worn round the waist.

Rows of lace, seen in their highest form of expression in the Horse Artillery jacket, were at first apparently merely loops by which the coat was fastened by toggles before the days of buttons and button-holes; they next became the binding of the latter, and were gradually extended across the breast. The *plastron*, or differently coloured front of the Lancer tunic, was originally a *plastron-de-fer*, an armoured breastplate worn with the gambeson. It is probable that the aiguillette of the staff officer was once a real picketing peg and rope with which he tethered his master's horse; and the drummer's empty hanging sleeve of the days of Marlborough perhaps represented a spare doublet or cassock carried for his captain. The gorget patch is all that is left of the gorget. When armour fell into disuse the officer slung this as an emblem of rank round his neck by a piece of coloured ribbon. The ribbon was next attached to the collar, and lastly the gorget itself went, leaving nothing but the tab.

¹ *The Academy of Armoury*, Randle Holme.

Finally it is worth recording that the officer's mess jacket seems to be the last survival of the soldier's doublet of the days of Queen Bess, which became first a sleeved waistcoat, and then a stable or shell jacket. This jacket is now worn solely by officers in evening dress, the only difference being that it is now open to show a waistcoat. Its connection with the old shell jacket can be traced much more clearly in the mess kit abolished some twenty years ago.

Turning next to equipment. When peace was made with America, the Board of General Officers produced an improved pattern of infantry accoutrements. The pouch had five tin compartments each to hold four cartridges with twelve more in a tin underneath—thirty-two rounds all told ; in addition to which twenty-four could be carried as a reserve in a cartridge box or magazine. This box was to be provided by the Ordnance and made in such manner as to be easily removed from the bayonet belt when not needed on the march or on service.¹ Even before this many infantry regiments had adopted the practice of slinging the bayonet from the shoulder instead of from a waist belt, the shoulder belt being at first under, and next over, the coat ; and this means of carriage was now adopted officially. Thus two shoulder belts were worn which crossed before and behind. To one was attached the pouch hanging to the right rear below the waist, to the other the bayonet on the left with the magazine as well when carried. The belts were of buff leather two inches wide, narrower and lighter than had been customary in the past. With this change the large buckles hitherto employed to adjust the length of the belt disappeared, and a handsome metal breast-plate was worn where they crossed in front.

When first raised in America, Light Infantry had been furnished with pockets or bags for bullets and a powder horn. Now they were given the usual pouch, and the powder horn was replaced by a small priming horn. The object of this was presumably to avoid the charge

¹ This replaced an older and heavier type of Ordnance cartridge box.

being reduced by emptying a portion into the priming pan before loading. For a time Light Infantry had a lighter and shorter musket and were equipped with a hatchet, originally the Indian tomahawk, to carve their way through undergrowth.¹ Later on these distinctions disappeared, so that all were equipped alike.

In 1808 the magazine was abolished, and the pouch enlarged to take 60 rounds, at which figure the quantity of ammunition carried remained.

The Rifleman's equipment was different, as his powder and shot were usually loaded separately. He wore a black waist belt from which a ball bag was suspended on the right front and a bayonet on the left; and over the left shoulder a black crossbelt with cartridge pouch. He carried a powder horn for the charge and a priming horn to fill the pan of his rifle, which was provided with a lock cover to keep the priming dry. Later, when percussion caps replaced flint and steel, they were contained in a small pouch on the waist belt. The priming horn and lock cover were then no longer needed. Later still, when a cartridge was always used, it was carried in the ball bag and the powder horn also disappeared.

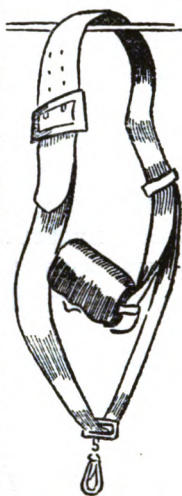
While the experience of the American War led to changes in infantry equipment, the campaign of 1794 in Flanders was responsible for alterations in that of

¹ Extract from Inspection Report, 22nd Regiment of Foot: "Light Infantry:—tomahawks 1784. Colours 1784. Lately returned from abroad" (from North America).

Other miscellaneous changes were as follows: In 1784 the grenadier's sword and match case were finally abolished as useless, and the wearing of pouch ornaments was ordered to cease. But the latter instruction, in crack regiments, was for long more honoured in the breach than in the observance. In 1786 infantry officers ceased to carry the esparton or half-pike. In 1792 the officers of Fusilier regiments, and those of grenadier and light companies, discarded their fusils for swords. Sergeants in marching regiments had been given muskets in 1769, retaining their halberds as well. In 1792 this ancient and honourable weapon was replaced by a half-pike something like that hitherto carried by the officer. To continue this story, the sergeant's pike disappeared in 1830; but he continued to wear a sword in addition to his bayonet until 1850. In that year the two weapons were combined into one, a short sword that could be fastened to the musket after the manner of the bayonet.

cavalry. This campaign is notable for being the last occasion when cuirasses were served out for use on service. But they proved more of an encumbrance than a convenience and were soon laid aside. Cavalry, in fact, was assuming more and more its modern rôle. Although all regiments except the Household Troops had been converted into dragoons, the dragoon had long ceased to be a mounted infantryman. The terms cavalry and dragoon were synonymous. The distinction now was between the more old-fashioned heavy and the more modern light regiments, and more of the former were converted into the latter. A shorter and lighter carbine was provided and the bayonet was discarded by light cavalry after the American War of Independence, though heavy regiments did not follow suit till some years later. The sword, on the other hand, was of increasing importance. In 1800, cavalry colonels were ordered to buy swords for their regiments from the Ordnance, as none could be considered as warranted that did not bear the Tower mark. Eventually, in 1844, the Ordnance were directed to supply the sword free of charge. Thus perished the last remnant of the very ancient custom whereby the leader was expected to provide his men not only with clothing and equipment, but also with arms.

In 1796 patterns of accoutrements were sealed for cavalry; and while in the infantry a shoulder belt had replaced the waist belt for the *arme blanche*, in the mounted services the process was reversed and the sword slung from a waist belt. The cavalry pouch held thirty rounds and was fastened to the carbine belt worn over the left shoulder. This had a swivel hook to which the musket was attached; the butt resting in a leather bucket. The equipment was the same for heavy and light regiments except that the latter had narrower belts.



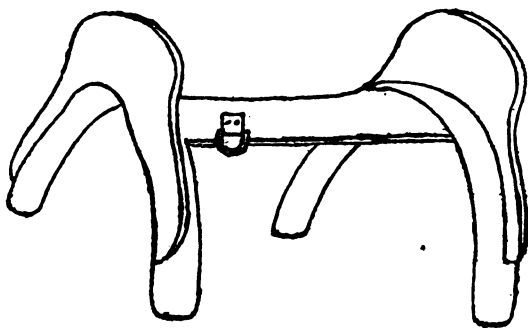
Cavalry pouch belt.

By the end of the century, therefore, the quantity of ammunition to be carried, and the type of accoutrements, were for the first time really standardized in both mounted and dismounted services.¹

When firearms came into common use the horseman's lance, like the infantry pike, tended to disappear until revived by Napoleon. So successful were his Lancer cavalry that after Waterloo we decided to rearm some of our Light Dragoon regiments with this weapon. The lance at that time was of the immense length of 16 feet but was soon reduced to 9 feet. It was looped by a sling to the arm with its foot resting in a leather bucket of which there was one at each stirrup.

At first the pistol was the Lancer's only firearm, but in 1837 he was given a carbine instead, slung, muzzle downwards, from the swivel of his cross belt as he already had a bucket at the stirrup. In 1839 the pistol was done away with for other regiments and henceforth only carried by officers, sergeant majors and trumpeters.²

So far the saddle has not been mentioned and some account of that important article of military furniture

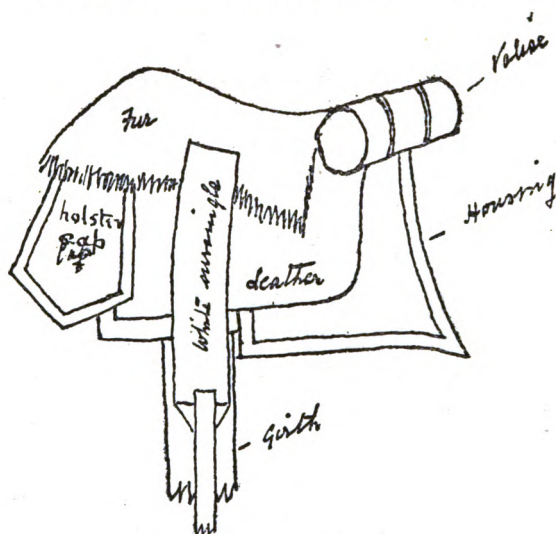


is needed. It must be supposed that it was originally a pad of sheep or goat skin, laid on the horse's back to give

¹ There was, however, no general scrapping of older patterns. Twenty-four years after the standard infantry pouch of 1784 was introduced, the Adjutant General circulated regiments to find out how much ammunition their pouches would hold.

² Although seldom used in recent times the lance was not actually

the rider more comfort. But, at any rate in mediæval days, it had a framework as well—a high wooden bow in front and another behind, joined together by a single bar in the centre, or by one on either side, from which stirrups were suspended. The intention of this contrivance, which later developed into a saddle-tree, was not to adjust the weight scientifically to the horse's framework. The rider sat directly on the animal's back; and its object was to protect his vitals and prevent his being unhorsed when he exchanged prods with his adversary. The framework was covered with canvas, and with this development the original skin became two articles. There was a pad or cushion under the tree, and another above on which the rider sat. The whole



Saddle and trappings 1751.

was covered with a cloth or housing which bore the Knight's emblems and devices.

By the eighteenth century military saddlery was more standardized, but still the same in essentials. Underneath was the pad, still in one piece, and next the tree. Over

abolished as a military weapon till 1928. It is now retained by Lancer regiments for ceremonial purposes only.

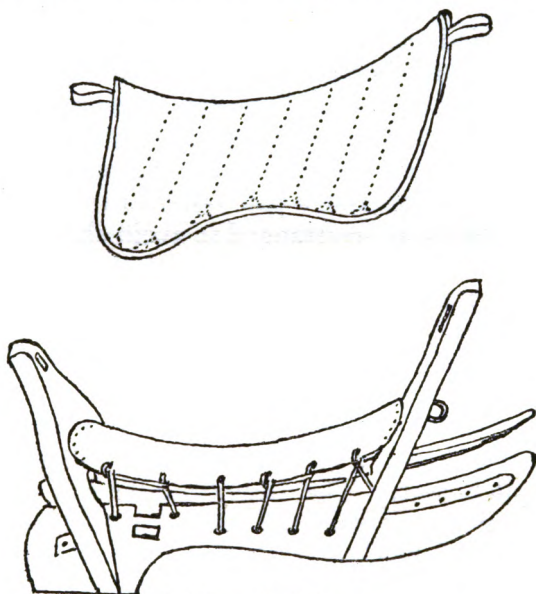
this was the housing, decorated, like the holster caps, with the regimental device, and on top of all a pad of leather and fur on which the horseman sat, the various parts being held together by a surcingle. It was extremely heavy and cumbersome and the rider's weight still rested directly on the horse's back.

The light jockey saddle introduced with the Light Dragoon bore no resemblance to a modern racing saddle. Though lighter, it was similar in general construction to, and must have been assimilated with, the ordinary saddle; for in the Napoleonic Wars all cavalry, except Hussars, had the same type.

The framework was of wood and consisted of very substantial front and rear arches joined by two side bars, the whole being nailed and glued together and covered with canvas. Underneath was a pannel in one piece made of basil lined with linen or serge. Above was a quilted leather pad of similar shape, with holes through which passed the pommel and cantle. This formed the rider's seat. The saddle is described in Clothing Warrants as "saddle with pannel and pad in one" and the assumption is that it was one complete unit, and the parts not detachable. The only change was that, in the Netherlands campaign of 1794, some of the heavier horse furniture was discarded with the armour. The ornamental housings and holster caps, which were only worn at full dress parades, were laid aside, and it was not at that time intended they should be resumed.

The Hussar, however, brought his saddle, with his uniform, from Hungary; and though no great outward change would have been apparent, it seems to have been this article that first embodied the most important feature of the modern saddle as compared with the old. The difference in principle between the two may be likened to that between the wheel of a barrow and of a bicycle. In the former the weight to be carried rests directly on the lowest spoke; in the latter it is suspended from a multitude of the upper spokes, each of which bears its share of the load. In the Hussar saddle the rider

no longer sat directly on the horse. The front and rear arches were raised in the centre and the saddle seat was suspended from them. The side bars, from being merely braces to the framework, assumed their modern function. They distributed the load along the animal's ribs, on either side of his back-bone. There was the usual square pannel underneath, but flaps secured by thongs to the side bars were provided. The arches were joined together by a raw-



Saddle and pilch seat.

hide centre (also laced by thongs to the side bars), which supported the pad on which the rider sat. This pad was called a pilch seat; a square of stuffed and quilted leather with loops passing round pommel and cantle. This saddle was lighter and various parts were detachable which made repair simpler.

With the Hussar saddle came the shabraque, and a sheepskin in place of the water-deck.¹ The former was really the housing under a new name but larger, just as the sheepskin was much more extensive than the fur pad.

¹ The water-deck is described on page 133.

At about the same time, the ordinary cavalry saddle was strengthened by the employment of metal. The front arch was made of iron, and the cantle of brass. In 1812 the Hussar saddle, with shabraque and sheepskin, was adopted for all light regiments, and the heavies were ordered to take their housings and holster caps into use when they came back from abroad. The latter would have automatically ceased to exist when the pistol was laid aside.

In the period that followed there were many modifications, particularly in the fifteen years that preceded the Crimean War, when several saddlers of repute submitted new designs for trial, and far more attention was paid to the horse's anatomy and to the avoidance of galls. The one-piece pannel became a pair fastened to the side bars, and accessories were re-arranged to avoid chafing. Better facilities were provided for taking the whole to pieces to simplify repairs and replacements, and weight was reduced. Lastly, during the Crimean War, a new type of saddle blanket was introduced, the numnah, which was to be used as a rug as well.

By that time, the light cavalry saddle consisted of saddle-tree and seat, a pair of pannels and flaps, and over all the pilch seat. The heavy saddle was of similar construction except that, instead of a pilch seat, there was one of stiff blocked leather, riveted to both arches, on account of the extra weight carried. As had always been the case, the bits were curb and bridoon and each horse had a crupper and breastplate. Stirrups and leathers, a surcingle and leather girth, a collar chain, heel rope and picketing iron, a pair of wallets and horse-shoe cases, baggage and cloak straps, a carbine bucket or pair of lance buckets, and a numnah, completed the appointments. Each troop carried 10 lassoes and the churn survived for the farrier to carry his implements. Shabraques, sheepskins and sabretaches were carried by all ranks of Heavy Dragoons and Lancers, but not by Light Dragoons or Hussars.

The horse's hoof also received attention. In 1853 a uniform type of shoe was approved, varying in weight

from 15 to 12 ozs. according to size. It had a single toe clip and a calkin only on the outside of the hind foot, the webbing on the inside being thickened to correspond. Six nails at least were to be used in front and seven behind.

Besides his accoutrements, arms and ammunition, the infantryman, when on service, had for long been given a knapsack and haversack for his necessities, spare clothing or rations, and a canteen to hold water. These had been provided regimentally as camp necessities, of all sorts and sizes, and carried in any way that was convenient. Blankets or watch coats were usually rolled, bandolier fashion, over the shoulder. The knapsack was a fur bag costing 6/- until the advent of Mr. Trotter, who introduced one rectangular in form, of painted canvas and with a wooden framework. It was worn as a ruck-sack with straps passing over the shoulders and under the arms; and, to prevent it from slipping off, the straps were joined together in front by another, buckled across the chest. The greatcoat was carried on top of the pack rolled in a linen valise. In 1817, the mess-tin, knife, fork and spoon were added to the scale of necessities; while the canteen and haversack, not essential while living in barracks, remained articles of camp equipment.¹

After this there were a number of minor modifications. The knapsack was lightened and made to fit closer to the back so as to relieve the loins. The greatcoat ceased to be carried in a valise. In light order it was placed inside the pack and on the line of march rolled on top with the mess-tin at the back. But these attempts to ease the marching soldier were no more than tinker's work. The equipment was to all intents and purposes the same as in 1808 when the 60-round pouch was introduced. There was no attempt to co-ordinate pack and pouch and fasten the lot to one set of shoulder straps, so that a load behind and in front should balance each other. The whole weight was behind the back. The problem of how best

¹ With the passage of years, the mess-tin became known as a canteen, and the original canteen as a water-bottle.

to carry the soldier's various adjuncts was never considered in its entirety.

The two belts and the breast strap all crossed in front of the chest. Any native porter knows better than to fasten a load in this way; it interferes with the free expansion of the lungs, so necessary when any exertion is undertaken. The heavy pouch was very awkwardly situated beneath the pack over the rump. When firing, men would remove several rounds at a time and put them under the belt whence they would be dropped and lost. It required much effort to extract the last few rounds; to do so was almost beyond the capacity of the man himself. The heel of the scabbard pointed to the rear and the bayonet could only be sheathed with difficulty; in fact if the pack was worn a neighbour's assistance was necessary. On service there was also a heavy wooden canteen slung from the left shoulder; from the right a haversack with rations, odds and ends or extra ammunition; and perhaps a blanket to be carried as well. The breast strap was so distressing that it was always unbuckled on the march. At the double the pouch and hilt of the bayonet flapped about, there was nothing to confine them to the sides. "If an infantryman has to step across a drain two feet wide," it was said, "he has to put one hand to his cap, and his other to his pouch, and what becomes of his musket!"

Besides this it must be borne in mind that every evolution was performed in a very tight-fitting coatee with the neck fettered by a stock. Altogether it is to be feared that the human anatomy received much less attention than that of the horse.

In 1850, however, a real endeavour was made to devise something better; but accoutrements were replaced so infrequently that most of our troops went to the Crimea with the older type of equipment. A waist belt replaced one of the cross belts. This carried a frog for the bayonet which, for the first time, hung perpendicularly. The pouch belt remained, but the pouch was partly supported by an auxiliary attachment to the waist belt, to relieve the pressure on the shoulder and chest.

Lastly, just after the outbreak of the Crimean War, an order appeared which created an entirely new precedent. For the first time the State assumed the responsibility for transporting a portion of the soldier's baggage, some ten pounds in weight. Leather squad bags costing 24/- were sanctioned at the rate of one per 25 men, in which a portion of the kit could be kept in barracks, or carried on a wagon. In the following year the plan was extended to cavalry. But this innovation came too late to be of avail in the Crimea, where the weight carried by the soldier in full marching order, with service equipment and two days' emergency ration, was just under 64 lbs.¹

That our firearm was so transmuted and refined, at a time when the soldier's equipment was so neglected, was



Brown Bess.

due to external rather than internal pressure. It was our enemies, actual or potential, who provided the stimulus.

The Brown Bess of Wellington's campaigns was identical in general design and action with the musket of Marlborough's Wars. It was of little use except up to ranges of about 50 yards, and the soldier was taught to reserve his fire till he could see the whites of his enemy's eyes. As some of the powder from the cartridge was shaken into the priming pan, the amount of the charge was not exactly regulated. The ball was a loose fit and would ricochet from side to side in its way down the barrel. The weight with bayonet was 11 lbs. 4 ozs., the barrel 3 ft. 3 in. long, the bore approximated to three-quarters of an inch, and the charge was 6 drams of powder. The barrel was bright for the sake of display until after Waterloo, when it was browned because the constant polishing in time wore it thin.

¹ For details see Appendix XIII.

The soldier was never taught practically how to aim and fire his weapon so as to hit a mark. All that was required was that he should be able to go through the motions smartly. In 1806 general officers were ordered to see that the troops had practice with ball ammunition, but the half-million of militia and volunteers raised at this time fired little or nothing but blank until they reached the front. One improvised regiment, when called on to fire a salute, forgot to remove the snappers used at drill to save the flint, and not a musket went off. Later on there was supposed to be a musketry course fired at a target, but as a rule it was a mere farce. The one aim was to get it over as quickly as possible. From lack of practice men were nervous of the violent recoil. Many muskets went off before reaching the shoulder. Cartridges would be inserted upside down, or the end would not be bitten off—perhaps intentionally. It was not uncommon for three or four rounds to be found at the bottom of the barrel after exercise and not above two shots in twenty would hit the mark.

An entirely new type of firearm had, however, been issued to a select few ere this, with a longer range and greater accuracy. The idea of rifling is almost as old as that of the musket itself. A rifle with spiral grooves bearing date 1547 can be seen in the Rotunda at Woolwich. It had been the practice to impart spin to the arrow by means of its feathers, and it would only need the illustration of a child's top to show that a bullet would travel more truly if centred in this way; but to make a rifle that would answer satisfactorily as a military weapon was no easy matter.

In some of the earlier examples the grooves are parallel to the bore, and evidently intended to absorb the fouling which is an objectionable feature of gunpowder even now, and was far more so in the past when it was not scientifically prepared. The old name for a ramrod was a scourer. In the smooth-bore this did not so much matter, as the ball could be made smaller than the barrel. But with the rifle a tight fit was essential and the leaden bullet had to be jammed into the grooves by

hammering it with the rammer. This required considerable force once the bore got choked. Endeavour was made to overcome this difficulty by using tight-fitting greased wads to carry off, each round, the residue left by the last ; but for some time without much success. Moreover, so long as armies fought in dense formations at close quarters, speed of fire rather than accuracy was the all-important factor. The smooth-bore had the advantage of being much quicker to load. The rifle was developed at first more for sporting than military use, though in the last half of the eighteenth century it was beginning to be employed in the latter capacity on the Continent.

We, however, remained content with the smooth-bore, and only learned the lesson that something more accurate at anything but point-blank range was required in the American War. Many of the insurgent colonists had rifles, which were a necessity to them in hunting and fighting the savages. These marksmen, trained in woodcraft, inflicted heavy losses on our men. At Bunker's Hill, groups of riflemen were specially detailed to pick off our officers whose gleaming gorgets made them conspicuous targets. Our Hessian mercenaries were armed with rifles ; volunteers were called for as sharpshooters, and hasty efforts made to collect such weapons, though only a few dozen were procured. In 1776 a rifle which loaded at the breech was actually invented in England, but the old school was inclined to laugh at the new-fangled weapon as a toy. We clung to our smooth-bore, just as we had clung to the bow, when it was being rejected abroad as obsolete.

Nothing resulted immediately from the experience of this war though the new idea germinated. But the French under Napoleon had several corps of light infantry armed with rifles, and at last we followed suit, a Rifle Corps being formed in 1800 out of detachments from other regiments.

After trying various types, home and foreign, the rifle selected was one designed by Ezekiel Baker, known as the Baker rifle. The spirally grooved barrel was nine inches shorter than that of the Brown Bess, but otherwise

the weapon was similar. When firing in close order the ordinary cartridge was used, but the rifleman was intended as a marksman and more commonly powder and ball were loaded separately. The bullet was then wrapped in a piece of greased rag or leather, known as a "plaister" or "patch," carried in the stock, and rammed home on the charge, care being taken not to bruise the powder. At first a mallet was used to hammer the ramrod, but this was soon discarded. The weapon was said to shoot accurately up to 300 yards, though a marksman did well who hit a human target 20 or 30 times running at a range of from 100 to 200. Nevertheless this represented extreme accuracy compared with the musket, but as against this the rate of fire was very slow. It took from $1\frac{1}{2}$ to 2 minutes to fire a round, whereas the smooth-bore would discharge 2 rounds a minute.

The Baker rifle must have been a dangerous weapon. If the bullet was forced home too vigorously it might well explode the charge and blow the man's arm off. Possibly this is why the mallet ceased to be used. On the other hand, unless the bullet were a really tight fit it would not take the rifling. To escape this dilemma, an ingenious French officer, Devigne, proposed in 1826 to give the rifle a small chamber on the face of which



the ball would rest, so that it could be expanded by hitting with a heavy rammer. But the cavity soon got choked with the residue, when the projectile again lay on the surface of the charge. Another idea, also French, was to have a central pin at the bottom of the barrel to support the bullet.



This, however, made the chamber almost impossible to clean.

The problem was rendered all the more difficult because every army was trying to go one better than its neighbours in lengthening the range of its rifle. To travel a short distance the bullet needed no great spin to keep it true. But the longer the trajectory the greater must be the initial rotation if it was to be still spinning

at the end of its travel. This could be achieved by increasing the twist—the inclination of the grooves to the axis of the bore. With a round bullet, however, the lead only entered the rifling at the maximum circumference, and if much twist were given the lead stripped off instead of taking the grooves. Matters were further complicated at long ranges by the fact that with a spherical projectile rotation was only at right angles to the axis so long as the trajectory was a straight line.

As soon as the path began to curve the bullet rolled over and over and accuracy of flight was lost. To surmount this conoidal bullets were experimented with, intended to travel point first. The bore, however, was large, and they were all head. To have added a cylindrical portion would have unduly increased the weight. It was thus impossible to guarantee they would leave the muzzle pointing in the right direction.



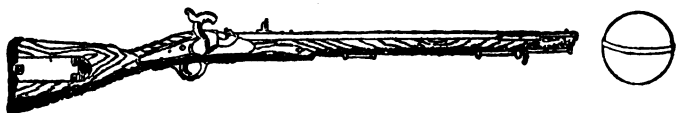
Many were the types of bullet tried to overcome these difficulties and that of forcing it down the barrel into the fouled grooves; an exertion that made the rifle-man's hands so unsteady that he could not aim straight. It was at this time too that the battle between different types of grooves and spirals began which later raged with far greater intensity in the case of the artilleryman's weapon.

In 1825 an elongated bullet invented by Captain Norton, in which the charge was held in a cup at the base, was the subject of experiment in England. The idea was that the explosion of the charge would expand the base of the bullet and force it into the grooves. This invention was solemnly turned down by a very conservative committee on firearms on the grounds that "a spherical ball was the only shape of projectile adapted for military use"; which was merely begging the question. In 1836 Mr. Greener, the gunmaker, invented another new bullet intended to be expanded by the shock of discharge. This was egg-shaped and provided with a tapered pin which was forced into a cavity when the rifle was fired.



This also was declined by the Board of Ordnance. It was originally intended for the musket. The tight fit would have prevented the escape of gas between bullet and bore, and added to the range and accuracy of the smooth-bore. The Duke of Wellington too was inclined to scoff at these new notions. His wars had been waged with an arm of three-quarter inch calibre and a round ball, and this he maintained was the best that could be devised. He had no idea of armies fighting five hundred yards apart. It was contrary to all his experience. It was actually held to be an advantage that we had a larger bore than many other countries. We could use their captured ammunition, whereas they could not employ ours. Such was the regard paid to accuracy.

These rebuffs must have discouraged inventors who were setting their brains to work to tackle a very intricate problem and when, in 1839, the Brunswick rifle replaced the Baker for the Rifle Corps a spherical bullet was retained. The feature of this was that the ball had a projecting band round the circumference, fitting into two deep grooves with much more twist than hitherto. The points of entrance were marked on the muzzle. The weight with bayonet was 11 lbs. 5½ ozs., the barrel 2 ft. 6 ins. long, the bullet .696 inch in diameter and the charge 2½ drams.



Baker rifle and belted bullet.

It is obvious that the belted bullet was forced to take the grooves, even though it was rather smaller than the barrel. But after a few rounds the rifling got choked. With the Baker each shot with its greasy rag carried off some of the fouling of the last. With the Brunswick there was nothing to prevent residue from accumulating. The rifle choked very badly and shot wildly at anything over 400 yards.

The Baker rifle had an entirely novel type of mechanism which was applied to the ordinary musket as well. In

1807 Mr. Forsyth, a clergyman, had discovered the properties of fulminating powder which detonates when struck far more violently than gunpowder explodes, but it was some time before this discovery was applied to fire the musket in place of flint and steel. The method now adopted was as follows. A nipple with a passage down the centre replaced the priming pan with its steel face, cover and spring. On this a cap filled with fulminating powder was placed, and, when struck by a hollow-headed hammer instead of a flint, the detonation fired the charge.¹ In 1836 a few muskets so fitted were issued for trial and three years afterwards we set about converting all our flint-locks into percussion muskets.

By 1844 our regular troops were practically all rearmed. With the flint-lock went the brush used to clean the priming pan, the lock cover and snapper. Snap caps were used at drill until 1851, when they were abolished because they cost more than new nipples. Missfires, of which there were on the average four out of every ten rounds fired, practically ceased.

In 1842 a new model of musket was produced generally similar to and of the same calibre as its converted predecessor. But it was sighted up to 150 yards, and the charge was reduced to $4\frac{1}{2}$ drams, none of which now went into the priming pan. This was the last phase in the evolution of the smooth-bore before it entirely disappeared in favour of the rifle, to which I now return.

The ultimate evolution of the rifle projectile was on very different lines to the belted ball of the Brunswick. Experiments with elongated bullets continued—especially among the French, always an inventive race, keen to try out new ideas which we afterwards adopt and perhaps improve on. What was aimed at was a shot that could be easily dropped down the bore, that would expand on discharge, take the rifling, remove the residue of powder and lead from the last round with it, and be accurate at long ranges by travelling point first. Eventually in 1841 the French Chasseurs were equipped with the first

¹ The percussion cap was invented by Thomas Shaw of Philadelphia in 1814.

military arm to fire an elongated bullet. This was recessed at the base to allow it to expand under the force of the powder gas and successfully dealt with the problem of fouling.¹ In 1847 a French officer, Captain Minié, went one better. He placed a cup at the base of the opening to assist the expansion.

1848 was a year of revolutionary disturbances on the Continent, and in 1851 there occurred the *coup d'état* which launched Napoleon III on his meteoric career. The name was still one to conjure with. It was a time of alarms and excursions and we made belated efforts to set our military house in order. A few minor attempts of these years to improve the soldier's equipment and



lighten his load have been mentioned, but, what was far more important, we took stock of our armaments. Other countries were all exchanging smooth-bores for rifles and in 1851 we began to follow suit, selecting the Minié as the best on the market. The weight with the bayonet was 10 lbs. 8½ ozs.—10½ ozs. less than the smooth-bore—the barrel 3 ft. 6 ins., bore .702, charge 2½ drams, and it was sighted up to 1000 yards. On account of its recess and rather smaller diameter the bullet could be made longer than earlier types of conoidal projectile without increasing the weight, though it was still far from being well centred.

The fins were intended to keep it true in flight. Should it be deflected in one direction, those on that side would be less exposed to air resistance, those opposite more so. This would tend to right it again. The cartridge was of paper in which the bullet was placed point inwards. The instructions for loading were as follows: First bite or tear the cartridge and pour the powder into the barrel; next reverse it and introduce the bullet, flat end first, tearing away the superfluous paper from its point when in the muzzle by a turn of the wrist; finally ram it gently home. The bullets were greased by having the end of the cartridge dipped in melted tallow

¹ The principle was identical with that of the bullet referred to on page 245, invented by Captain Norton.

to ease the operation of ramming and help in removing the fouling. This fact was made much of by native Indian agitators, and was an ostensible cause of the Mutiny. To the Hindoo it was said the grease was made from the fat of the sacred cow, to the Mohammedan from the unclean pig. To the former it was sacrilege to bite the cartridge, to the latter defilement. Although denied officially, the assertions were not without a vestige of truth.¹

In 1853, after trying various types at Enfield, a new weapon was adopted, the rifle musket pattern 1853, afterwards known as the Enfield. The outstanding feature of this was its reduced calibre, .577 against .702 for the Minié. This enabled the bullet to be made truly cylindrical with a round head, and yet lighter. It weighed 1 oz. in place of 1½ ozs. There was more surface in contact with the rifling, the projectile was much better centred, and the twist was reduced to half a turn in the length of the barrel. The Enfield was also lighter. Its weight with bayonet was 9 lbs. 3 ozs.; the barrel was 3 ft. 3 ins. long with three grooves, the charge 2½ drams, and it had a folding sight. In 1855 the bullet was provided with a box-wood plug in the recess. This was said to give greater, more certain and uniform expansion, easier loading due to lessened fouling, and greater accuracy. It was effective up to 900 yards. With the Minié the pouch would only take 42 rounds. With the new pattern 60 were again carried.

At this time developments were proceeding very rapidly, breech-loaders were being tried, and we hesitated about making drastic changes. The outbreak of the Crimean War found us in a state of transition and forced us to take more active steps. Many of our troops still had the smooth-bore. Rifles were hastily made and purchased from Liège and America. They were packed off to the seat of war in bulk for distribution and the old muskets presented to the Turk. But both types, the

¹ It had always been the practice to bite the cartridge. The soldier had no hand to spare to tear it. The regulation way was to employ the "first right pair of double teeth."

1851 and 1853, were in use alongside of each other with different ammunition, which must have added to the difficulties of a campaign in which administrative ability was conspicuously lacking. Moreover the troops were devoid of practical training with this entirely new type of long range weapon. Selected officers and non-commissioned officers were sent for a course of instruction when it first appeared ; and the yearly scale of practice ball ammunition was increased from 30 rounds (or 60 for light infantry) to 90, the Rifleman's allowance. But many regiments lacked sufficient interest in musketry even to draw the extra quantity until ordered to do so.

Despite this, the Enfield rifle amply proved its merits in the Crimean campaign ; in the picturesque language of the *Times* correspondent, "it smote the enemy like a destroying angel." Moreover the introduction of this weapon had two notable sequels. The Royal Small Arms Factory at Enfield, which had existed in a small way since 1811, came into greatly increased prominence ; and the necessity for training the troops in its use led to the creation of the School of Musketry at Hythe.

The long range rifle, fired by a percussion cap so far more reliable than flint and steel, proved such a deadly weapon that it revolutionized tactics as radically as the musket and bayonet combined had done a century and a half earlier. At Waterloo, infantry, cavalry and artillery fought, broadly speaking, all together at close quarters and immediately under the eye of the General-in-Chief. After the middle of the nineteenth century this mass formation began to disappear. The rôles of the three arms became much more specialized and far greater distances separated the combatants. The infantry struggle was the battle proper, artillery and cavalry standing apart. The one supported its infantry or tried to silence the enemy's guns, while the other remained ready to exploit any success and undertook scouting and reconnaissance. With his troops extended over great areas, the Commander-in-Chief ceased to be the one pivot of co-operation and could no longer directly control the battle except by means of his reserves.

Finally, during the Great War, infantry action was rendered impossible by the very potency of the infantryman's latest arms—the magazine rifle and still more the machine gun. It proved impossible for the unprotected soldier to come within reach of his entrenched adversary until the latter's resistance had been largely annihilated by an intense bombardment from artillery of immense power.

Thus the cycle of unarmoured infantry, which had replaced the cycle of armoured cavalry, gave way in its turn to the fresh cycle of armour whose progress we are now witnessing in the form of the mechanically propelled Tank.

The evolution of the scientifically constructed modern gun with its complex ammunition belongs to a later page in history. This era, it is true, had dawned shortly before the Crimea but only in more or less experimental forms; and it will be more convenient to treat the subject as a whole in a subsequent chapter. Certain new ideas, however, had been definitely adopted, by far the greatest, for once in a way, being a really all-British invention.

Until the great siege of Gibraltar, 1779–83, to fire shell from cannon had not been attempted. Their use was confined to mortars and howitzers. For guns with their larger charge of powder there were several sorts of projectile, but none contained explosive. The most common was the solid shot, or at very short ranges against a human target case shot, a collection of bullets in an iron canister which broke up and scattered its contents when the piece was discharged. At this siege circumstances were peculiar. From our commanding positions on the north face of the rock we looked right down on our opponents, situated on the low-lying isthmus that joins it to Spain.

“In firing from batteries placed high on the rock, from which the whole interior of the besiegers' trenches and batteries could be seen, round shot fired from heavy guns would evidently have been wasteful and ineffectual practice against workmen and troops thus exposed to the

direct, though depressed fire of the fortress. The distance being too great for grape or case shot, howitzer shells were tried ; but shells fired directly from howitzers had neither accuracy nor force sufficient to take full advantage of the command which the batteries possessed over the works on the isthmus below. The charges being small, the projectile velocity of the shells at the moment of bursting was not sufficient to impel the fragments forward with the force required to produce the desired effect, whilst the great bursting charges which the shells contained occasioned very great dispersions of their splinters. Guns were therefore substituted for howitzers, and 5 $\frac{1}{4}$ -inch shells fired from long 24-prs., with as large charges as the shells could resist. The effects were prodigious ; the fragments of the shells were driven forward with far greater force ; the dispersion was less, on account of the great preponderance of the projectile velocity, and the effect upon the whole troops and working parties in the enemy's trenches and batteries was extremely destructive. This remarkable instance of the efficacy of direct shell firing attracted the notice of all artillerists. . . . The late Major General Shrapnel had the ability and sagacity to perceive that under such circumstances the effects of direct shell firing might be prodigiously increased by filling the shells with musket or carbine bullets, . . . and reducing the bursting charge to a quantity just sufficient to break the shell with as little scattering effect as possible upon the bullets ; and to that able and distinguished officer, therefore, is due the credit of the invention which has rendered his name so justly celebrated."¹

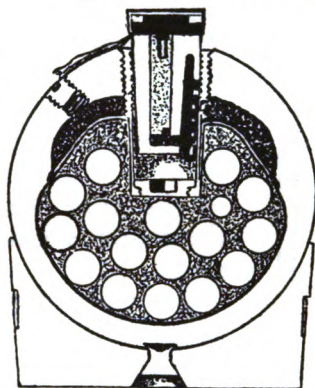
The shrapnel shell was finally evolved in 1803, and was distinctly an invention, not an adaptation. Other types depended for effect upon their disruptive charge, and the

¹ A treatise on naval gunnery by General Sir Howard Douglas, 1851. As prematures resulted from the contact of powder and bullets the two were later separated by a diaphragm and the bullets fixed in place with pitch or plaster of Paris. The shell was weakened by internal grooves to assist disruption and riveted to a wooden base, to ensure that the fuze-hole pointed towards the muzzle.

fuze was cut long to burst at the point of impact. The shrapnel was merely an envelope containing musket balls, propelled by the discharge of the gun. The fuze was cut shorter, and the bursting charge merely sufficient to split the envelope in the air some little distance from the enemy, leaving its contents free to travel forward with slight natural dispersion. In fact for long its official name was spherical case shot.

Shrapnel immensely enlarged the sphere of artillery as it played havoc among troops in the open. But for long it was very unreliable owing to the crudity of its fuze, that shown in the illustration being a new invention at the time of the Crimean War. The point at which it ought to be burst was a critical one. If not attained the bullets scattered and fell short, if surpassed they remained bunched and overshot the target. The fuze was still merely a cylindrical sheath of wood, open at either end and filled with a slow-burning composition, the length of which governed the time when the shell exploded. The flame of the powder gas passing round the shell set the composition alight and when burnt through it fired the charge. Further there was nothing to support the base of the composition. Not infrequently it set back on the shock of discharge and burst the shell prematurely. Of 1090 shrapnel fired at Woolwich butts in 1819, 74 burst in the bore, 71 in the butts, and 111 were blind. At the time of the Crimea there were many of these elementary fuzes in the service. There was a series A to G, one to seven inches long, from which a selection could be made; and a number of others intended to be cut or to have the contents bored away at the gun, to suit its velocity and the range.

Once it was found that shell could be fired safely from



Shrapnel shell.

guns they began to be regularly employed; and the ordinary or "common" shell was no longer used solely with mortars and howitzers. This of course depended for effect on its large bursting charge which broke up the wall into fragments and was fuzeed so as to burst on impact. The solid shot remained for battering down obstacles, or was made red hot to set buildings on fire; and the case shot for troops in the open at close quarters. Though other projectiles were used they were mainly modifications of these types.

The other outstanding change was in the means of igniting the charge. Though flint-locks were tried, mainly in the navy, the regular method was still by slow match applied to a tube of quick-burning composition placed in the vent. The head of the tube was either split to expose the contents or had trailing ends of quick-match.

But when detonating composition was discovered its properties were made use of to fire the gun as for the musket. The first idea was to use a percussion lock as with the musket; the next, universally adopted in 1853, to provide the tube with a head filled with fulminate, through which passed a serrated bar with a ring at the end. When the bar was pulled by a lanyard the friction fired the tube. In the army it was usually of copper, in the navy of quill to save the men's bare feet.

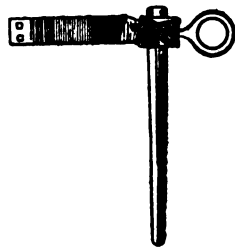
The gun was still a simple casting of iron, or sometimes of gun-metal if the size was small. Brass guns were lighter than iron; they were more expensive in the first instance, but could be recast. The sole repair was to renew, by bushing, the vent which scored and eroded fairly rapidly, as the aperture was not sealed by the ill-fitting tube. This work was only undertaken at Woolwich Arsenal.

There were four types of gun: the cannon proper with a large charge; the carronade (called after the foundry at Carron), which was very short and of low velocity; the howitzer with high elevation and small



charge ; and the mortar, permanently bedded, in which the range was regulated solely by the amount of the charge.

The garrison carriage was a simple wooden framework of two side members, joined by transoms, mounted on four small trucks. But by the time of the Crimea iron was being used abroad where wood was likely to decay and rot. Wood, however, was preferred if the site was exposed, being less liable to damage if struck by a shot and easier to mend. The field carriage was equally simple in construction, two long wooden sides joined together and forming a trail. In the Horse Artillery the enlisted drivers were mounted postilion fashion and the gunners sat on the carriage and limber. In the Field, the civilian drivers walked with their horses in single file. But in the year 1809 double draught began to be employed, a pole sometimes replacing the pair of shafts.



Friction tube.

Sights only came into use about the beginning of the nineteenth century. Before then the gun was laid by line of metal, notches cut in the muzzle and breech, the elevation being judged by eye. It is characteristic that when, in 1801, it was proposed to use sights in the navy, Nelson reported against such an innovation. What else could be expected of one whose sole endeavour in action was to lay his ship as close as possible alongside one of the enemy ; or indeed alongside two at Saint Vincent ? A crude form of elevating gear also came into use, but guns were elevated, depressed, traversed and run up into firing position almost entirely by hand or handspikes.

Hitherto guns had been mainly fortress, siege and naval weapons, but the man-killing properties of shrapnel led to artillery being employed as an independent arm in the field. Instead of attaching a couple of light pieces of one sort or another to each of the three battalions of an infantry brigade, all six were grouped together and formed into an artillery brigade, later styled a battery.

For this reason battery armaments were at first very haphazard and consisted at the Peninsula either of 9-pounders or heavy 6-pounders combined with light 6-pounders and 5½-inch howitzers. Ammunition supply must have been difficult and it is perhaps owing to this that at the Waterloo campaign there were batteries composed entirely of 9-pounders of 13½ cwt.

After Waterloo the Board of Ordnance was left with a large store of guns, increased by the fact that establishments were cut down ; and it was presumably to make use of these that mixed armaments were again reverted to. The establishment of the Horse Artillery Troop in 1849 was two light 6-pounders of 10 cwt. and two 12-pounder howitzers, only two being horsed. In the Field Artillery there were 6- and 9-pounders with 12- and 24-pounder howitzers ; none were horsed, and equipments varied in different batteries.

In the same way the armament of forts was of all sorts and sizes. The commonest guns were 32- and 42-pounders, 8-inch carronades firing a 68-pound shot, mortars up to 13-inch calibre, and howitzers to 12 inch. In 1852, however, we embarked on a programme of re-armament, in which Horse and Field Artillery received the main share of attention. There were but 50 field guns left in the United Kingdom, and they dated back to the days of Waterloo. 300 new guns with 200 ammunition wagons were ordered, a few 6-pounders but mainly 9-pounders ; and it was these that formed our movable armament at the Crimea.

CHAPTER XI

THE CRIMEAN WAR

AT no time since Waterloo was the British army so utterly unprepared to face active service as during the years preceding the campaign in the Crimea which resulted from the declaration of war by France and England against Russia early in 1854; and for this it is impossible to absolve the Duke of Wellington from blame as he was Commander-in-Chief during the epoch when the army sank to its nadir of efficiency.

During the reaction that followed Waterloo the Duke strove in the face of opposition to hold together the army, organized and administered as when he led it to victory. It was due to him that some remnant of the Wagon Train survived for a while, that the Commissariat was not entirely disbanded and that important reforms were instituted in the Ordnance Office. Again when, in 1842, he held the office of Commander-in-Chief, he protested vigorously against the soldier being defrauded by not getting his yearly issue of clothing punctually, and by being required to pay for having his coat decorated in an unorthodox manner.

But not to advance is to recede, and his ideas seem to have gone no further. His men had been scum, armies always had been composed of scum, and though no one had realized better than the Duke the importance of studying the comfort and feeding of his men during active service, he apparently saw no reason to try and gain ground and attempt to improve the social status and training of the soldier once the war was over.

In 1827 the Duke entered the political arena as a great party leader and had to concern himself with the principal topics of the day, of which military efficiency was most certainly not one; and when next he swayed the destinies of the army, from 1842 to 1852, he made no effort to check the dry-rot which had made steady progress in the interval. It would seem as if his ideas on military matters crystallized after Waterloo, for he

passively resisted, if he did not actively oppose, reforms such as the replacement of the musket by a rifle, a step other countries were adopting. It must be owned, however, that when he accepted the appointment he had already passed the allotted span of three score years and ten, and that his powers were probably on the wane, for his daily ride to the Horse Guards ended in little more than a doze in his arm-chair. A Tory of the Tories, he was out of touch with the modern spirit of reform and resented innovation. The Whigs were the party of progress, it was confidently predicted that the millennium was at hand, and social measures required that military expenditure be curtailed to the uttermost farthing.

Early in 1852 Lord Hardinge, an extremely able and distinguished soldier, was appointed Master General of Ordnance on relinquishing the post of Governor General of India, becoming Commander-in-Chief later in the same year when the Duke died, and when Lord Raglan became head of the Ordnance Office. At that time Sidney Herbert was Secretary-at-War, an ardent reformer and probably the best man who had ever occupied the post. It was due to Hardinge, assisted by Herbert and Raglan, and not to the Duke, that the re-armament referred to in the last chapter was taken in hand; that the Enfield rifle was introduced and that we had an adequate supply of new guns at the Crimea instead of nothing beyond the few old pieces still remaining on hand as relics of the Napoleonic Wars. At the same time the first attempt at anything like combined training was undertaken at a camp of exercise formed at Chobham in 1853, which was shortly followed by the acquisition of the 9000 acres of Hampshire moorland now known as Aldershot camp.

But unfortunately these great improvements in weapons and training were unaccompanied by any improvement in the system of administration, the various officials concerned with which were still as follows :

(1) A Secretary of State for War and the Colonies, sitting at the Colonial Office, was in theory responsible

for military policy. But his time was occupied with the constantly increasing colonial business and in reality he exercised only a vague nominal surveillance over the army.

(2) The Secretary-at-War, at the Horse Guards, dealt in Parliament with army business and finance for the regulars and also for the militia, still organized purely on a county basis and for which the Secretary of State for Home Affairs was in theory responsible.

(3) The Commander-in-Chief, also at the Horse Guards, held supreme command of the army under the Sovereign. But there was no defined relationship between his responsibilities and those of the Secretary-at-War, without whose concurrence he could initiate no measure which touched finance. One branch of his office, under the Quartermaster General, dealt with the movement and quartering of troops—barracks, camps and transport, though no military transport corps existed. The other, under the Adjutant General, dealt with recruiting and discipline, the soldier's pay and personal effects, his arms, appointments, clothing and necessaries.

(4) The army, that is the cavalry and infantry, was clothed and equipped regimentally, under the general superintendence of the Board of General Officers who advised the Adjutant General on questions of pattern or scale.

(5) The Master General of Ordnance commanded, and was responsible for the equipment and efficiency of, artillery and engineers.

(6) The Board of Ordnance, nominally under the Master General though virtually independent, provided these two Corps with all they needed. It supplied the army with arms and ammunition, greatcoats and a few other items, and with camp equipment on the few occasions when used. It also built and equipped barracks.

(7) Regiments at home dealt direct with the contractor for rations and fuel. In the Colonies there were a few Commissariat officers and clerks to deal with financial matters, provide funds and rations and manage butcheries and bakeries. This department was a branch

of the Treasury, and it may be noted in passing that a proposal to transfer the Commissariat to War Office control had been resisted by Wellington.

(8) A separate office existed for the combined Army and Ordnance medical service, responsible in part to the Secretary-at-War, the Commander-in-Chief and the Ordnance Office. The staff consisted solely of doctors and Purveyors who acted as quartermasters in the few garrison hospitals which existed.

(9) The Paymaster General was another semi-independent official, and the office of Controller of Army Accounts, instituted in the reign of Queen Anne, had only been abolished in 1835 when it was merged in the audit office of the Exchequer.

To all these detached offices there was no single co-ordinating head. Their duties were implicit and not exactly defined and they corresponded only by letter. They understood what they had to do under the daily peace routine to which we were inured since Waterloo and nothing more.

As though this were not bad enough, confusion was worse confounded owing to changes brought about by the war itself. It was impossible for one Minister to undertake the manifold responsibilities of a great campaign and at the same time attend to colonial affairs; nor had the Secretary-at-War sufficient authority to act as the *alter ego* of a Cabinet Minister. Four months after war was declared, War and Colonies were divorced and the Duke of Newcastle, who held the combined post, became Secretary of State for War. This change, though most desirable, was a risky one to make during the crisis of the war. The new War Department had neither a separate office nor an experienced staff; and no one knew what business it was to undertake and what to delegate to the pre-existing office of Secretary-at-War.

The Board of Ordnance suffered from the opposite extreme, being robbed of some of its highest officials. Lord Raglan, the Master General, was sent to command the forces in the Crimea and the vacancy left open. The office of Lieutenant General of Ordnance was revived

instead. The Lieutenant General, however, considered his duties did not extend beyond the military side of the work and there was no one in supreme authority. The Surveyor General, the principal civil officer, also went to the war. All that was left of a Board that at one time consisted of a Cabinet Minister as chairman and five members, was Mr. Monsell the Clerk, who represented it in Parliament, and Sir T. Hastings, the Controller and Principal Storekeeper. In fact there was no longer even the semblance of a Board of Ordnance.

It is difficult to imagine a greater contrast than that between the state of affairs during our long struggle with France and at the Crimea. Then, at the outset, much of the army had previous experience of warfare and the younger generation of soldiers grew up in a martial atmosphere. Now, except for a small sprinkling of veterans, the army was ignorant of all beyond the routine of peace. Then the soldier had opportunity to acquire the habit of self-help. He was inured to hardship, privation and fatigue, realized the importance of safeguarding such scanty baggage as he possessed and carrying it on the march, however heavy the burden. He was versed in expedients and improvisations. We have seen how regiments, when on the move or unable to obtain what they needed from the Commissariat, enlisted the assistance of, probably commandeered what they needed from, local authorities in towns and villages. Now the army knew of no life but that in barracks where the soldier's necessities were provided for him, and where his duties were those of an armed constabulary.

In the Peninsula the base was at Lisbon, in Flanders much closer at hand. The Crimea entailed a sea journey of 3000 miles. Then operations were conducted in civilized countries whose allies we were, and the soldier was on friendly terms with the inhabitants on whom he was often billeted. Now these features were absent, the Crimea might have been a Sahara so unable was it to produce anything the army required. Then there was a Master General and full Board of Ordnance, each member

with a defined duty. Now there were but two officials responsible to no one in particular. Then the Commissariat had grown up with the work it had to do, though even so it was criticized for want of sympathy with the army. But Wellington was there to see that the troops did not suffer from its lapses. Now it had to be suddenly expanded from a very exiguous nucleus of officials scattered about the Colonies, whose only experience lay in supplying rations under a peace system, and checking expenditure by an elaborate system of forms and returns. Also Lord Raglan was a very poor substitute for Wellington as an administrator.

The campaign was entered into in a lighthearted spirit of adventure, largely because the country was ripe for a scrap after such a long term of peace. We were anxious to preserve the integrity of the Turkish Empire, while Napoleon III desired military glory to consolidate his newly won throne. For the presence of Italian troops there was even less excuse. Piedmont had no quarrel with Russia, and Cavour only wished to enlist the sympathies of England and France against Austria. It has been said that the Great War was inevitable owing to the preparations made, with no other object, by the Great Powers. This is the last thing that can be said of the Crimean War. Our army establishments had been cut down till they were little more than cadres. There was no reserve of trained soldiers, nothing but raw recruits to fall back on to bring regiments up to strength, and no reserve of matériel. There were friction and acrimony among all the various sets of officials who bandied questions from one to the other without reaching settlement. It had not been realized that a great winter siege operation would have to be undertaken in a bleak and barren country and very soon a host of new problems arose which it was the job of no one in particular to tackle.

It was understood that the Board of Ordnance would provide and send out any special stores wanted at the seat of war. But, while attending to the wants of the gunners

and sappers, the Office did not look upon it as its business to initiate action on behalf of the army. Sometimes the Secretary-at-War instructed the Ordnance what to provide and sometimes he even placed contracts himself in competition with the Ordnance, charging the cost of his purchase to its votes. At other times the Secretary of State for War might set the ball rolling by verbal instructions to Monsell, Clerk of the Ordnance in Parliament. This absence of a written authority was contrary to precedent and was resented by Hastings the Controller, who was responsible for the executive side of the work. The two in fact were constantly bickering and refused to be bound by each other's decisions.

For example, on June 21st Hastings placed a large order for special warm clothing without the formality of calling for tenders, at the instance of the Secretary-at-War. Then Monsell stepped in and cancelled the arrangement, apparently because he had not been consulted and considered the medical authorities should first advise as to pattern. It took till July 28th to decide this petty wrangle. A consignment was reported to the Admiralty as being ready on August 7th, and there the Ordnance considered its duty ended. The navy was even more dilatory and did not provide shipping till October 16th. This vessel, *The Prince*, foundered at Scutari in a gale on November 14th and all its contents were lost. The loss was disastrous, for she carried a large quantity of winter clothing.

The failure to provide hutments for the troops engaged in the winter operations furnishes an equally sorry tale of ineptitude. A contractor first foresaw these might be useful and submitted designs in August which were mislaid somewhere between the offices of the Secretary of State for War, the Secretary-at-War and the Ordnance. Fresh plans were prepared and the Secretary-at-War ordered supply. Then some Ordnance official stepped in and objected to certain details of construction. When the huts were eventually ready, delay was caused by disputes with the railway as to how much

it should cost to carry them to the port of embarkation, and further delay in providing freight. Portions arrived in different ships at different times and there was difficulty in linking the parts together. By the time the huts were erected the winter was practically over. There was the same trouble over tents, owing to the poles and canvas not being shipped together.

The Ordnance Office took care that its own goods, munitions and equipment for the gunners and sappers reached their destination. It advised its representatives of what had been despatched and obtained receipts. In justice to a department that, like every other, incurred much odium, it must be said that the Ordnance served its offspring well. They had many comforts the army lacked, and others complained of their preferential treatment. It even provided them with waterproof sheets, a luxury hitherto unknown, and a great boon in the bad weather. But it looked on accessories that it was ordered to supply for the army as a side issue; took no trouble to ensure early shipment, and contented itself with getting an acknowledgment from the Master on a bill of lading. The Admiralty failed to find freight and transport in the Black Sea broke down. Owing to these factors much went astray. Also unscrupulous contractors took advantage of the situation. Some guns were bought from America at the rate of so much per ton. When these arrived they were found to be merely blocks of iron with a small hole bored through them. Owing to pressure of space at the Tower the premises of Hodgson and Hayter, a firm of regimental packers who had almost a monopoly of that class of work, were commandeered and what was delivered there for shipment to the Crimea practically escaped examination.

Such being the situation at home it is not altogether surprising that chaos reigned at the Crimea, and that tragedy resulted. After Waterloo it was decided that the Ordnance and not the Commissariat should take charge of all stocks at the seat of war except food and improvised transport for its carriage; and Wellington, when

Master General, drew up field service regulations showing how the work was to be carried out.

The plan was either forgotten or ignored. On the spur of the moment it was decided to limit the functions of the Ordnance to the provision of a siege train and to leave everything else to the Commissariat, though no instructions were issued defining the duties of this department whose business was primarily to control and not to initiate expenditure. It had only peace precedents to rely on.

The Commissary General was not empowered to purchase anything as a charge to army votes except by order of the army commander. It was the duty of the latter to say what transport he required and he might direct the Commissariat to procure anything else necessary. Only if armed with this authority could it set to work. This accorded with the old custom which drew a line between ordinary expenditure for which the regiment was accountable from its pay and that due to "extra-ordinaries of war." The soldier still paid for his rations and any extra clothes in excess of his beggarly allowance. The Commissariat had to deduct what was due on this account before issuing the regiment with its pay, and the regimental paymaster in turn had to debit each man's account with the value of what he received. Stocks were short and it was not uncommon for the soldier to be charged for what was demanded but never issued. Wellington had found instances of this and ordered a refund to be made, but now the practice passed unchecked. This cumbrous system was also the outcome of ancient custom, a relic of the times when troops were raised by Indentures. In the days of mercenaries nothing could be simpler, but the plan had long outlived its utility.

On the other hand the army commander might make known his wants to some one of the many authorities at home, though who was to take charge of what arrived in response to his letters was very vague. The Quartermaster General thought it his business to look after camp equipment, the Commissariat special clothing, the medical

department hospital requisites, while boots were the care of no one in particular. They were neither Ordnance stores, Commissariat stores, nor Quartermaster General's stores. A large consignment was carried back to Constantinople, because the ship's officer could find no one willing to take them over. "When sending out boots," says Sir T. Hastings of the Ordnance, "I should either have written to the Commissariat, or the General in Command, or the Quartermaster General." Could anything be more vague? The head of the medical service complained that he was under the immediate authority of no less than five superiors—Secretary of State for War, Secretary-at-War, Commander-in-Chief, Master General and Board of Ordnance.

The essential feature that was missing was a central clearing house and storekeeping department, a pivot on which all this work would turn; one branch to which all wants would be made known and responsible for meeting them, whether from local sources or from England.

The troops actually landed destitute of many essentials. Besides his clothing, knapsack and necessities, the soldier was provided with a haversack, water bottle and blanket. For cooking, ten men shared a camp kettle and each company had 10 billhooks for chopping up any firewood it could find, nothing more. Tents had to accommodate a sergeant and 20 men, one to each strip of canvas, a most inadequate allowance, the authorized scale being 15. The same type of tent served as a regimental hospital, a purpose for which it was altogether unsuitable. The sole medical equipment was contained in a pair of panniers. There was no transport for conveying the sick and wounded, and even this small amount of baggage had to be carried by hand.

Frequently knapsacks were parted from their owner on board ship, the vessel being hurried back for reinforcements or food. In other cases they were left behind on account of the weight, and the blanket used instead as a holdall. When recovered weeks later they had been looted. Cavalry valises shared the same fate.

Camp kettles were even discarded owing to the difficulty of carrying them. Further, instead of handing over to each regiment its camp equipment, it was placed on board before the unit embarked, and no receipt taken even from a ship's officer.¹ Naturally much of the already too meagre allowance went astray. For two or three months the men of many regiments possessed literally naught beyond the clothing they stood up in. They could neither wash nor change their underclothes. Much of the camp equipment was that used in the Peninsular War fifty years before. It had been lying idle and neglected in the Ordnance stores ever since. Canvas was rotten. Billhooks came off second best when they encountered a faggot. Entrenching tools were equally bad. Pioneer tools provided regimentally were notoriously worthless; they were only carried for display, not for use.

From the very outset the army was in dire need. No uniforms or boots were due from the colonel till the following April. The regiment was unable to procure necessaries. The reserve of camp equipage held by the Ordnance was expended and took time to replace. Great-coats were thin and shoddy. They soon wore out and there were none to replace them. This want was to some extent made good by stripping the dead, British or Russian. The soldier's boot was quite unfit to withstand the mud and slush of the trenches. Soles parted from uppers, leather and stitches rotted. When later a supply did arrive, provided by the Ordnance, the boots were no better than those found by the colonels. Moreover

¹ "The errors that occurred in the Crimea would appear in the first instance to have begun at home, since instead of giving over each item of equipment to the troops, when embarked for service, the practice was to ship the stores prior to the troops, handing over to the officer commanding a list of the stores so placed on board, but for which none of the ship's officers gave any receipt, in fact, the equipments were embarked as baggage. The result was manifest, the vessel having no charge, the stores never hardly turned out correct. One vessel, the *Alps*, arrived at Balaklava with some 84 tents and not a tent pole."—Evidence of Captain Gordon before a Committee on the Supply and Transport of Stores and Ammunition in the Field, 1862.

they were too small for feet swollen by exposure to the wet and frost. The heel had to be cut away before the foot could be inserted. Men refused to accept such worthless footwear for which they had to pay, preferring to use sandbags to protect their feet. Also the socks sent out were too small; many were said to be of children's sizes. There were neither spare horse-shoes nor forges. Nosebags quickly rotted so that corn was lost, and there were none to replace them. There was a scarcity of horse rugs. The want of these accessories, combined with insufficient forage, resulted in heavy mortality to horses.

Infinitely more disastrous was the state of the hospitals. The medical arrangements broke down hopelessly. Even when soldiers arrived in hospital properly clad their kit was not looked after and lost. Far more often they were in verminous rags and so remained. There was a dearth of bedding, blankets, baths, laundries, stretchers, bandages and splints, cooking and eating utensils, in short of everything necessary to equip a hospital. No nursing staff existed, the regiment was supposed to look after its own patients. The crowded and noxious wards in which cases were indiscriminately herded gave what were then terrible hospital diseases, such as gangrene, every chance to flourish. Then cholera broke out. It is small wonder that the death-rate was appalling. By the end of winter no less than one-third of the strength of the army had perished, primarily from want of shelter and raiment combined with insufficient nourishment.

Enthusiasm had been aroused by the splendid appearance of the long service regular troops that left England in the full panoply of war and by news of early success to our arms; so that when tidings of these disasters reached home there was great perplexity to account for them. No one in authority escaped severe and savage criticism. But the fault in reality lay with the nation which for forty years had so neglected its army and the Ministry of the day which entered into this mad adventure without counting the cost. At the root of all the mishaps and blunders lay the canker of a faulty system of administration.

The Commissariat, shackled by Treasury regulations, had no conception of how to set about a formidable task for which it was entirely unprepared ; one indeed which, after Waterloo, it had never contemplated having to undertake ; and a proper medical service did not exist. However, after making every allowance, it cannot be denied that both might have done better given a little common sense. Hospital ships passed to and from Malta, yet no attempt was made to get anything from there. Much that was lacking might have been got in the bazaars of Constantinople.

But the doctors were few in number and the Purveyors helpless and callous. Their one concern was to keep their accounts in order by means of returns and forms. An officer taken to hospital in a dying condition was actually placed under arrest on the day of his death for failing to sign some form connected with his admission.

Mr. Fidler, the Commissary General, was an elderly gentleman of sixty-six, devoid of energy or initiative. He rated his responsibility at its lowest possible value, made no attempt to procure what was wanting, pleaded lack of instructions, refused even to interview divisional generals, and preferred to conduct business by correspondence. The first aim of his understaffed assistants was to keep their complicated accounts square and ensure that nothing was parted with for which regulations and authorities did not provide. That the troops should get the clothing and comforts of which they were so sorely in need was to them a secondary consideration. They would refuse to make issue because the proper form was not forthcoming, or the officer's signature in the wrong place.

The Commissary General was allowed to fix his own scale of transport. Though it was quite inadequate he did not even provide to his own scale. There were no proper roads and half the enfeebled troops were engaged in carrying rations and stores for the other. He declined to provide fuel as there was no regulation governing such an issue. No doubt in Wellington's campaigns the troops were able to collect their own firewood—now they could

not. Even when ordered to do so he displayed no alacrity. While ready to find horse-shoes for his own transport animals, he was unwilling to do so for cavalry horses. He would not stir, however great the need, until he got a written order from a Quartermaster General who seems to have been equally inept. What was far worse, he allowed large stocks of winter clothing to lie idle for lack of which the army was perishing. In November and December, 12,000 greatcoats arrived. Of these there remained in stock by January 9000 besides 2000 watch coats. The reason given was that under the regulations greatcoats were only to be renewed once in three years ! Only 8000 out of 24,000 blankets and rugs were issued. 6000 pairs of militia trousers and coatees came out in November ; they were still in his stores six months later.

Regiments had been warned not to demand extra clothing from the Commissariat. Supplies, they were told, would be distributed as they arrived. Thus the Commissariat could plead ignorance and the Quartermaster General never thought of calling for returns of what was available. Even when, later on, stock returns were compiled they were grossly inaccurate.

The result was inevitable. The army eventually burst asunder the coils of red tape in which it was bound and shackled. Administrative control of any sort vanished. Everyone helped himself to what he could lay hands on. Each branch determined that whatever happened it should not be its fault if it went short. Each accumulated what it could, regardless of its neighbours, either by direct purchase or by demanding what it pleased from any official at home who would be good enough to attend to its wants. Each strove to maintain its own independent transport. An Army Works Corps and an Army Transport Train were formed. A contractor was sent out to make a railway. Each built up its own stock. The hospitals did likewise. The gunners and sappers both accumulated reserves of anything likely to be wanted for siege operations. The Quartermaster

General set up a miscellaneous store of his own. Even though there might be enough of any one item to go round the stock was unevenly distributed. One branch was deficient of what another might hold in abundance. The Quartermaster General sent to Constantinople to buy tons of nails which were all the time to be had from the Transport Train and Works Corps. The destruction of docks was suspended while the engineers sent to the Bosphorus for white lead of which there was plenty in possession of the railway. Guns, urgently wanted for an attack on the Redan, could not be mounted for want of rope of which the Army Transport Train had an abundance. Matters were little better than before when there was a universal shortage.

Amidst this welter of confusion and incompetence one figure shines out in brilliant relief. Florence Nightingale, the very antithesis of the dram-drinking Sairey Gamp of that time, who had devoted her life to studying hospital management, volunteered her services at the seat of war. Her offer crossed a letter from Sidney Herbert asking her to go out, and she landed at Scutari in November 1854 in charge of 38 women nurses. It is in connection with her tender care of the sick and wounded, her assuagement of the pangs of the dying and her attention to the convalescent that the name of Florence Nightingale is chiefly cherished in the army. But, great as was her work in alleviating suffering, she has an even greater claim to honour as an organizer and administrator than as a hospital nurse.

Beneath a gracious exterior she concealed a heart of fire and a determination of steel. Never before had women been employed in military hospitals and it needed all her persistence to overcome the inertia of the medical authorities who were placidly claiming that all was well, and bitterly resented her interference.

She framed her own indents on the Secretary-at-War, saw to it that what she asked for was sent out and, in the teeth of official regulations, insisted on a prompt distribution. Baffled in her first bout over a consignment of

shirts that could not be opened without a Board of Officers to be assembled a fortnight later, she soon gained the mastery. The next delivery was forcibly opened and distributed while the Purveyor could only wring his hands in departmental anguish. It was through her efforts that a combined depot of equipment, food supplies and medical stores was opened at Scutari and a laundry where linen, hitherto only rinsed out in cold water, could be properly washed. She attended to the equipment of the wards with furniture and utensils, procured large quantities of shirts and socks, had trousers made and rigged up dressing-gowns. "The fact is," she writes, "I am now clothing the British army," which is no exaggeration seeing that the most of it passed through our hospitals. The best testimony to her work lies in the statistics of hospital death-rate which fell from 44 per cent at the date of her arrival at Scutari to 2·2 per cent after she had laboured there for six months.

Truly does Florence Nightingale deserve most honourable mention in these annals as an Ordnance Officer of the finest type.

But she could not have done what she did except for Russell, the first of the great war correspondents, and Delane of the *Times*, who gave such publicity to Russell's letters. This was the first war at which newspapers had been represented. Correspondents had a roving commission unfettered by censorship, uncontrolled by the army commander, who did not know what power he had to deal with them.

"Custom," says Sir Evelyn Wood, "and an acquired sentiment of reticence under privations, tied the tongues and pens of our chiefs. William Howard Russell dared to tell his employers, and through them the English-speaking people, that our little army was perishing from want of proper food and clothing. He probably made mistakes, as his statements, often hurriedly written, were based on incomplete information. He incurred much enmity, but few unprejudiced men who were in the Crimea will now attempt to call in question the fact that by awakening the conscience of the British nation to the

sufferings of its troops, he saved the remnant of those grand battalions we landed in September.”¹

What the public knew of the happenings at the seat of war was what Russell and Delane told them. Delane was accused of being a sensation-monger. Raglan complained that Russell's letters “must be invaluable to the Russians and in the same degree detrimental to H.M.'s Troops.” Nevertheless a press campaign was needed to arouse the apathy of the nation. The *Times* was then at the zenith of its fame, a mighty power in the land. It published very strong leading articles accusing statesmen and the military hierarchy of incompetence, and attacked Lord Raglan. It got up subscriptions to provide the army with comforts. Requisites of all sorts poured out to the Crimea, and by the spring, when it was too late, there was a glut of warm clothing. The public conscience was awakened and insisted that the whole system of army administration was wrong and must be set right.

A great series of administrative reforms, to be mentioned in the next chapter, was set on foot, in connection with which Captain Gordon, a half-pay officer, was appointed Ordnance Storekeeper at the Crimea on September 3rd, 1855, with the definite duty of providing for every branch of the service, the Secretary of State for War sending out an order that application was to be made to him for everything in the nature of munitions, stores or equipment. In place of a number of separate departments, each having its own transport, the whole were consolidated.

First the Quartermaster General's stores became Ordnance, the engineering department was next taken over, then the artillery train stores, the Purveyor's, and lastly the stocks held by the Army Works Corps, Army Transport Train and railway. The whole were amalgamated, and when we quitted the Crimea this centralized store department saw that everything was evacuated. At the same time that this great reform took place at the seat of war there was a similar consolidation at home,

¹ *The Life of Sir William Howard Russell, the First Special Correspondent.*—Atkins.

where the Ordnance became responsible for providing every nature of store.

After a long and most costly detour the main road was regained, and the Ordnance became the sole store-keeping department of the army. After all, in a sense, this was its rôle from the very earliest days of its existence. Then, except for arms and armour, troops depended for all they needed upon those with or against whom they waged war. Since then the path had become obscured and diverged into by-ways; the colonel intervened and took one branch, the Commissariat another. But now all the tracks reunited into one broad highway along which the Army Ordnance Department and later the Royal Army Ordnance Corps has marched ever since.

APPENDIX I

MASTERS OR MASTER GENERALS OF THE BOARD OF ORDNANCE

1414.	Nicholas Merbury.	1759.	John, Viscount (after Earl) Ligonier.
1475.	John Sturgeon.	1763.	John, Marquis of Granby.
1483.	Rauf Bigod.	1772.	George, Viscount Townshend.
1485.	Sir Richard Gyleford.	1782.	Charles, Duke of Richmond.
1513.	George, Lord Carew.	1783.	George, Viscount Townshend.
1537.	Sir Christopher Morris.	1784.	Charles, Duke of Richmond.
1548.	Sir Philip Hoby.	1795.	Charles, Marquis Cornwallis.
1559.	Ambrose, Earl of Warwick.	1801.	John, Earl of Chat-ham.
1597.	Robert, Earl of Essex.	1806.	Francis, Earl of Moira.
1603.	Charles, Earl of Devon.	1807.	John, Earl of Chat-ham.
1608.	George, Lord Carew.	1810.	Henry, Earl of Mulgrave.
1634.	Mountjoy, Earl of Newport.	1819.	Arthur, Duke of Wellington.
1643.	(In commission.)	1827.	Henry, Marquis of Anglesey.
1660.	Sir William Compton.	1828.	William, Viscount Beresford.
1664.	(In commission.)	1830.	Sir W. Gordon.
1670.	Sir Thomas Chicheley.	1834.	Sir George Murray.
1679.	(In commission.)	1835.	Richard, Lord Vivian.
1682.	George Legg (Lord Dartmouth).	1841.	Sir George Murray.
1689.	Frederick, Count Schomberg.	1846.	Henry, Marquis of Anglesey.
1693.	Henry, Viscount Sidney, Earl of Romney.		Henry, Viscount Hardinge.
1702.	John, Earl (after Duke) of Marlborough.	1852.	Fitzroy, Lord Raglan.
1712.	Richard Savage, Earl Rivers.		
1714.	John, Duke of Marlborough.		
1722.	William, Earl of Cado-gan.		
1725.	John, Duke of Argyll.		
1755.	Charles, Duke of Marlborough.		

LIST OF THE CHIEF OFFICERS DIRECTLY RESPONSIBLE FOR
ORDNANCE SERVICES*Principal Storekeepers of the Board of Ordnance*

1594.	Thomas Bedwell.	1718.	Sir T. Wheate, Bart.
1600.	John Lee.	1722.	George Gregory.
1604.	Sir Amias Preston.	1746.	Andrew Wilkinson.
1609.	Sir Roger Ayscough.	1762.	Sir Edward Winnington.
1612.	Samuel Hales.	1765.	Andrew Wilkinson.
1615.	Nedtracey Smart.	1778.	Benjamin Langlois.
1621.	Thomas Powell.	1780.	Henry Strachey.
1631.	Richard March.	1782.	John Aldridge.
1643.	John Falkener.	1783.	Henry Strachey.
1660.	Richard March.	1783.	John Aldridge.
1672.	Sir George March.	1783.	Mark Singleton.
1674.	Edward Conyers.	1806.	John McMahon.
1684.	William Bridges.	1807.	Mark Singleton.
1685.	Thomas Gardiner.	1829.	F. W. Trench.
1691.	William Meesters.	1830.	Hon. H. Dundas.
1701.	James Lowther.	1834.	J. R. Bonham.
1708.	Robert Lowther.	1835.	Lt.-Col. T. H. G. Anson.
1710.	Edward Ashe.	1841.	J. R. Bonham.
1712.	Dixie Windsor.	1845.	Sir Thomas Hastings.

Director of Stores (War Office)

1855.	J. B. Godley.	1857.	Admiral Sir J. C. Caffin, K.C.B.
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Controller (Woolwich)

1870.	Major General Sir H. W. Gordon, K.C.B.
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Commissary General of Ordnance (Woolwich)

1876.	Major General Sir H. W. Gordon, K.C.B.	1881.	Major General King.
1879.	Major General Young, C.B.	1882.	Major General Molony.
		1887.	Major General Ingram.
		1895.	Major General Pridham.

Principal Ordnance Officer (Woolwich)

1898.	Major General Sir J. Steevens, K.C.B., K.C.M.G.
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Director of Equipment and Ordnance Stores (War Office)

1904.	Major General Sir F. E. Mulcahy, K.C.B.
1913.	Major General T. P. Battersby.

- 1914. Major General Sir J. Steevens, K.C.B., K.C.M.G.
- 1918. Major General Sir H. D. E. Parsons, K.C.M.G., C.B.
- 1923. Major General R. K. Scott, C.B., C.M.G., D.S.O.

Director of Ordnance Services (War Office)

- 1928. Major General C. D. R. Watts, C.B., C.M.G.

APPENDIX II

Description of the Arms of the Board of Ordnance as recorded in the Herald's office in 1823, together with a note on the Motto, "Sua Tela Tonanti."

WHEREAS His late Most Sacred Majesty by Warrant under his Royal Signet and Sign Manual bearing date the nineteenth day of July 1806 signified unto the late Most Noble Charles Duke of Norfolk then Earl Marshal and Hereditary Marshal of England that He had been pleased to give and grant unto THE RIGHT HONOURABLE and HONOURABLE THE BOARD OF HIS MAJESTY'S ORDNANCE His Royal Licence and Authority to bear the Arms hitherto used by them (here follows a description of the Arms given in greater detail below).

KNOW YE therefore that WE the said GARTER CLARENCEUX and NORROY in obedience to the Royal Command in pursuance of His Lordship's Warrant and by virtue of the Letters Patent of Our several Offices to each of Us respectively granted do by these Presents exemplify unto the said RIGHT HONOURABLE and HONOURABLE the BOARD of HIS MAJESTY'S ORDNANCE the Arms following: that is to say AZURE three FIELD PIECES in pale or on a CHIEF ARGENT three CANNON BALLS proper. And for the Crest Out of a MURAL CROWN ARGENT a dexter cubit ARM the hand grasping a thunderbolt winged and enflamed proper with the Motto following—SUA TELA TONANTI. And I the said Garter do by these presents exemplify unto the said BOARD the Supporters following that is to say On either Side—A CYCLOPS, in the exterior hand of the dexter a HAMMER and in that of the SINISTER a pair of FORCEPS resting on the SHOULDER of each respectively, all proper the whole as in the Margin hereof more plainly depicted the said Arms Crest and Supporters with the Motto to be borne and used forever hereafter by the Said RIGHT HONOURABLE and HONOURABLE the BOARD OF HIS MAJESTY'S ORDNANCE on a Common Seal, Shields, Banners or otherwise according to the Tenor of the said Royal Warrant and Laws of Arms.

SUA TELA TONANTI

By Major W. J. Asser, R.A.O.C. (ret.)

There is no information as to when the arms and device were adopted, but that they were in use long before 1806 may be inferred from the wording of the Royal Warrant of that date, which merely covered with its authority, as many other Warrants

have done, a piece of old established custom. Buttons of far earlier date bear three cannon and cannon-balls. On its creation the Army Council revived for its fourth military member the designation of Master General of the Ordnance and at the same time appropriated the device used by former Master Generals. Finally, after the Great War, in recognition of their war service the Army Ordnance Department and Corps were welded into one Royal Army Ordnance Corps with "Sua Tela Tonanti" as its motto.

There has been in the past much uncertainty as to the proper meaning of the words for, as will be seen below, this incomplete phrase admits of two versions which are opposed in sense. Nevertheless the general idea conveyed in both device and arms, which mutually support and illustrate each other, is clear enough. They denote the transfer to the Board of Ordnance of the chief attribute of the supreme deity of Roman mythology. "Tonanti"—the thundering (one)—refers to Jupiter whose frequent epithet is Tonans. "Sua Tela"—his weapons—cover the thunderbolt, Jove's attribute, illustrated in the crest, and also, by metaphorical application, those terrestrial thunderbolts, the cannon balls carried on the shield and the pieces from which they are fired. So too the Cyclopean supporters, primarily the assistants of Vulcan, the god who forged the thunderbolts for Jupiter, also represent the smiths and other artisans who fashioned projectiles and guns for the Board of Ordnance.

The trouble about "Sua Tela Tonanti" is that, like many other Latin mottos, it lacks a verb. As a rule the missing verb can be readily supplied, e.g. "Nil sine labore"—Nothing *can be accomplished* without labour—but not so here. "Tonanti" is in the dative, which case may be governed either by a verb that denotes giving or by one that denotes taking away. Thus, with the phrase freely rendered and provided with the appropriate verb, two versions are open to choice. One is the somewhat tame submission that we—i.e. the old-time Board or the present-day Corps—are the servants of thundering Jove, forging his weapons for him. The other would run—We have wrested Jove's own weapons from his grasp (and hurl them ourselves).

The metrical form of the motto, a hexameter ending, afforded the hope that, like many other Latin mottos, it was taken directly from some Latin poet, in which case the context would have supplied the sense. But diligent research has failed to elicit such a source, and it may be accepted that there is no line in classical poetry which ends with these words.

There is, nevertheless, a strong presumption for the ultimate

derivation of the motto from a classical source and in favour of the latter of the alternative versions. It seems highly probable that it is a free adaptation of a line in Manilius (I. 104)—“Eripuitque Jovi fulmen viresque tonanti.” She, i.e. Ratio=reason or science, has wrested from thundering Jove his lightning and strength. The words are of course different, but “sua tela” (his, i.e. Jove’s weapons) are the exact equivalent in sense of “fulmen viresque” (lightning and strength or power), and there can be no question which set of words has the more sonorous ring for a motto.¹

In the passage from which this line is quoted—it occurs in the first book of *Astronomica*—Manilius, like an earlier and greater Roman poet, Lucretius, hymns the triumph of natural philosophy which, by ascribing to their true causes such phenomena as thunder and lightning, earthquakes, volcanic eruptions and the like, has freed men’s minds from superstitious terrors. From the earth it has ascended into the heavens and by its rationalistic explanation of the thunderstorm has wrested from Jove his lightning and strength.

This verse appears to be about as well known as any that this not much read poet has produced, and may be found in one or two collections of classical quotations. Milton, whose great poetry teems with classical lore and allusion, knew the line, we may be sure. There is more than an echo of it in Book VI of *Paradise Lost*. In order to rally and re-arm the fallen angels for renewed onslaught against the heavenly hosts, Satan has invented gunpowder and cannon. He utters the proud vaunt that their foes

“ . . . shall fear we have disarmed
The Thunderer of his only dreaded bolt.”

The resemblance in idea between this line and the Ordnance device is so striking that it not only points to a common source in the Manilian line, but tempts one to ask if the coat of arms and motto of the Board of Ordnance were not in use in Milton’s time. Cromwell naturally paid keen attention to Ordnance work and for

¹ Grateful acknowledgement is due to the erudition and courtesy of two gentlemen who have helped the enquiry to a satisfactory conclusion. In a letter to the *Sunday Times*, one of the papers in which the question was raised, “J.B.W.” suggested that the probable origin of the motto was to be found in the line from Manilius quoted above. Mr. A. E. Housman, who is professor of Latin poetry at Cambridge, and who has recently brought out a new edition of Manilius, strongly supports this view and, among other information, furnished the instances given above which show the suggestive influence of the line.

some nineteen months after the Battle of Worcester served on the standing committee of the Ordnance, and it is pretty certain that the Protector's Secretary, John Milton, would also have a good acquaintance with Ordnance matters.

The Manilian line also inspired Turgot's famous epigram on Benjamin Franklin—"Eripuit coelo fulmen, mox sceptrum tyrannis". (He tore the lightning from heaven, anon their sceptres from tyrants), the first part of the line being an allusion to a celebrated experiment by Franklin, a pioneer in the science of electricity, when he flew a kite in a thunderstorm and drew down the electrical discharge; the second part to his efforts in the American War of Independence and to his inspiring influence on the leaders of the French Revolution. Turgot's epigram is singularly apt seeing that Franklin is supposed to have been the first to attempt to fire a gun electrically.

There is a fairly familiar phrase which was perhaps suggested by Milton's verse, and so would have its source in Manilius. The politician forestalled in some brilliant scheme by a rival, the novelist who finds that his startlingly original plot has already been used, or anyone in like predicament is sometimes described as having been "robbed of his thunder."

APPENDIX III

THE EARLIEST PRINTED VOCABULARY OF STORES OF THE YEAR 1664

The original, in highly ornate print, is in the Public Records Office.

Office of the Ordnance

Brass and iron ordnance :

Cannon	Falcon
Demi Cannon	24 pr Bullet
Culvering	12 pr Bullet
Demi Culvering	8 pr Bullet
Saker	6 pr Bullet
Minion	3 pr Bullet

Round shot for :

Cannon	Falcon
Demi Cannon	24 pr Bullet
Culvering	12 pr Bullet
Demi Culvering	8 pr Bullet
Saker	6 pr Bullet
Minion	3 pr Bullet

Cross-bar'd shot for :

Demi Cannon	Demi Culvering
Culvering	Saker

Double-headed shot for :

Demi Cannon	Saker
Culvering	Minion
Demi Culvering	

Tin cases filled with musket shot for :

Culvering	Saker
Demi Culvering	Minion

Bace and Bur	Hand Grenadoes
Bars of Iron	

Ladles and sponges for :

Cannon	24 pr Bullet
Demi Cannon	12 pr Bullet
Culvering	8 pr Bullet
Demi Culvering	6 pr Bullet
Saker	3 pr Bullet
Minion	Ladle Staves
Falcon	

Cases of wood for cartridges for :

Cannon	Falcon
Demi Cannon	12 pr Bullet
Culvering	6 pr Bullet
Demi Culvering	3 pr Bullet
Saker	Funnels of Plate
Minion	
Corn Powder	Grand Barrels
Match	Pistol Bullet
Match Lock Muskets	Long Pikes
Snaphance Muskets	Three Quarter Pikes
Musket Rods	Short Pikes
Bandaleers	Bills
Halberds	Hatchets
Harquebusses	Swords
Blunderbusses	Musket Shot
Pistols	Sheet Lead
Crows of Iron	Chests
Javelins	Tan'd Hides
Tackle Hooks	Sheep Skins
Ladle Hooks	Baskets
Linch Pins	Canvas
Spikes	Paper Royal
Forelockkeys	Oyl
Sledges	Tallow
Great Melt Ladle	Starch
Small Melt Ladle	Needles
Nails of Sorts	Thread
Copper Nails	Lanthorns Ordinary
Beds	Dark Ordinary
Coyns	Muscovia Lights
Trucks	Wad Hooks
Axletrees	Handcrow Levers
Commanders	Rope Spunges
Tampeons	Gunner's Horns
Pulleys great	Priming Irons
Pulleys small	Linstocks
Heads and Rammers	Marlin
Formers	Twine
Bur Cases	Wyer
Budge Barrels	Handscrews

Tar'd rope for :

Breeching

Tackles

Port Ropes

Port Tackles

Junk

NOTES

Cross-bar'd shot. A cannon ball cut in half and the halves connected by a short iron bar.

Double-headed shot. Two shot fastened together by a short piece of iron.

Bur shot. A kind of case shot.

Corn powder. Powder like grains of corn, whereas serpentine powder was fine in grain.

Snaphance muskets. Flintlocks.

Forelockey. A wedge passed through a hole in a bolt to keep it in place.

Coyne. A wedge placed under the breech of a gun to give it the required elevation.

Truck. The wheel of a naval gun carriage.

Commander. A large mallet.

Former. A wooden cylinder rather smaller than the bore of the cannon or musket used for forming cartridges.

Sheet lead, sheepskin. Used to cover the touch-hole of a loaded piece. The latter also employed to make the heads of sponges.

Muscovia lights. Lanterns with Muscovy glass, a kind of talc.

Handcrow levers. Crowbars.

Linstocks. A pointed staff with two arms or cocks to which were attached the lighted match that fired the cannon.

Handscrews. Possibly the thumbscrews used a hundred years ago in the army and navy in place of handcuffs. They locked the two thumbs together.

APPENDIX IV

FORMS OF WARRANT AND INDENTURE GOVERNING THE SUPPLY OF ARMS TO THE ARMY

“To the Officers of the Ordnance in the Tower of London.

I desire you to exchange the old muskets, and deliver new Arms in their stead to my regiment.

Given under my hand 10th. Feby. 1659/60. **GEORGE MONK.**”

This occasion is unique. It refers to the supply of muskets to the Coldstream Guards, the first Royal regiment to exist at the Restoration.

Afterwards a great formality was observed. For instance, in June 1664, there being assembled The King's Most Excellent Majesty, H.R.H. The Duke of York, H.H. Prince Rupert, the Lord Chancellor, Lord Treasurer, Lord Privy Seal, Lord Archbishop of Canterbury, Lord Bishop of London, Duke of Buckingham, Duke of Ormond and many other notabilities and secretaries :—

“It was this day ordered by His Majesty in Council that the Lieutenant of the Ordnance do forthwith issue 100 arms for the use of the Company levied for his Majesty's Garrison in Portsmouth.” This, to modern ideas, seems like taking a steam-hammer to crack a nutshell.

This elaborate ceremony ceased when a Secretary-at-War was appointed and the next example refers to a free issue of arms to replace others lost on service :

George R.

Whereas it has been represented unto US that the under-mentioned Arms are wanting for the respective Regiments of Horse and Dragoons against each of their names set down to replace the like number broke and lost at the battle of Fontenoy, and at the skirmish of Clifton. OUR Will and Pleasure therefore is that out of the Stores remaining within the Office of OUR Ordnance under your charge, you forthwith cause the said arms to be delivered to the respective Colonels or to their order, and you are to take the usual Indents for the same, and insert the charge thereof in your next Estimate to be laid before the Parliament. And for so doing this shall be as well to you as to all other OUR Officers herein concerned a sufficient Warrant.

Given at OUR Court at Kensington, the 29th day of August, 1746, in the 20th year of Our Reign.

By His Majesty's Command

Hollen Newcastle.

To our right trusty and right entirely beloved cousin and councillor John, Duke of Montagu, Master General of Our Ordnance.

	Carbines.	Pairs of Pistols.	Bayonets.
Earl of Hartford's	84	80	—
General Honeywood's	29	21	—
Major-General Bland's	33	16	43

It will be noticed that "Indenture" has here been abbreviated to the modern term indent.

The form of Indenture reads as follows :¹

INDENTURE FROM A COLONEL OF A REGIMENT FOR ARMS
ISSUED TO HIM

This Indenture, made between the Master General and Principal Officers of His Majesty's Ordnance for and on behalf of His Majesty and A.B. witnesseth that the said A.B. doth acknowledge by these presents by virtue of the Board's order of (or other proper authority as the case may be) to have had and received the several sorts of good, well-fixed, and serviceable Arms and Habiliments of War hereunder specified. For all which Arms and Habiliments of War the said A.B. doth hereby undertake to be accountable, and to maintain and continue the very same Arms in good repair, and to return and deliver the very same Arms into His Majesty's said Magazine, fixed and serviceable, when he shall be thereunto required (the hazard of the War only excepted). And that in case any of the said Arms be lost, by negligence, or by any other default, that then the said A.B. shall and will buy so many good Arms out of His Majesty's Magazine as shall re-supply the Arms so lost, at the rates usually paid by His Majesty for the like Arms.

¹ This is the form employed in the early part of the nineteenth century. It probably differed little from that used a hundred years before, though it is to be supposed that the words "the hazard of the war only excepted" were originally absent.

APPENDIX V

PROOF OF GUNS AND AMMUNITION, 1783¹

Gunpowder is manufactured by several persons, under contracts with the Board of Ordnance ; the Manufactory at Feversham, which belongs to Government, not being able to furnish them with near the quantity they want. The Board supply the Contractor with salt-petre. The India Company engage by their Charter to provide for Government five hundred tons every year, if demanded, at fifty-three pounds per ton in time of war, and forty-five pounds per ton in time of peace. The Contractor engages, at the price of one pound seven shillings and sixpence per barrel for workmanship, to work eighty pounds of double-refined salt-petre into a barrel of gunpowder of one hundred pounds net weight, to hold and undergo the usual Proof and Survey. Before any gunpowder used by Government is received into the Magazines, it undergoes, by order of the Board, a Proof at Purfleet. The only established mode of proof was, by raising a given weight in a frame, called a Vertical Eprouvette, by a given quantity of powder ; but by a course of experiments lately made, by order of the then Master General, with mortars, this mode has been found not to be a certain proof of the strength and goodness of the powder ; for a powder that with two drachms would raise the Vertical Eprouvette four inches and five tenths, would, with three pounds, range a shell from a thirteen inch mortar one thousand one hundred and three yards only ; when another powder that with the same quantities would raise the Eprouvette only one inch and nine-tenths, would range the shell one thousand one hundred and twelve yards : The report upon these experiments is now under the consideration of the Board of Ordnance. The Officers employed in making and superintending this Proof are, the Comptroller of the King's Laboratory at Woolwich (or, in his absence, the Deputy) the Chief Firemaster, the Assistant Firemaker, the Storekeeper, the Clerk of the Survey and the Clerk of the Check at Purfleet. After every Proof, a report of the quantity and state of the Powder proved, signed by the Comptroller, the two Firemasters, and the Storekeeper, is made to the Master General and the Board ; who, in consequence of that report, direct what powder shall be received as serviceable into the King's Magazines.

The ordnance are either of brass or iron. All the brass ordnance are cast in the Royal Foundry at Woolwich. The iron are cast

¹ From a Report by Commissioners appointed by Parliament to enquire into Public Accounts, 1783.

by contract, at Foundries in different parts of the Kingdom, and are delivered to the Storekeeper at Woolwich: The Contractor is bound to cast them, agreeably to moulds sent to him by the Board, at eighteen pounds a ton, subject to such Survey and Proof as the Board shall direct; and if a concealed defect in any one gun is discovered, all the guns belonging to that contractor, laid down for Proof at that time, are rejected. Superintending the Proof was formerly intrusted to Officers in the Civil Department of the Ordnance; the Surveyor General, with other Civil Officers, were present at the first day's Proof; the Board attended the second day. But by His Majesty's Warrant, dated the 24th of January 1783, this duty is transferred to the Officers of the Artillery, it is now executed by the Inspector of Artillery, with the Assistant Inspector, and Proof-Master.

Every gun undergoes first an examination, and then a proof. The examination is performed with instruments calculated to discover errors in the forms and position of the bore, and to ascertain whether the construction is agreeable, in every respect to the mould sent as a pattern to the Gun Founder; then by forcing water into the bore; and lastly, by an inspection of the inward surface, effected by throwing into it a quantity of light, by means of a mirror, which frequently discovers concealed defects that escape every other examination and proof. If the gun stands these examinations and proofs, to a degree sufficient in the judgment of the Inspector, it is received into His Majesty's Stores, upon a report to the Board, signed by the Inspector of Artillery, the Assistant Inspector, and the Proof-Master.

Extract from Ordnance Regulations, Home, 1855

The following rules are to be observed in proving large and fine grain gunpowder with the 8-inch Gomer Mortar at all stations.

1. The bed to be placed on a horizontal platform, and the mortar brought to exactly 45° elevation and properly pointed.

2. To be fired with two ounces of powder, accurately weighed, and placed as uniformly as possible in the bottom of the chamber by means of a funnel.

3. The 68 pound shot being carefully cleaned is then to be placed in the mortar gently and uniformly by means of a pair of lifting tongs provided for the purpose.

4. The mortar being fired by means of a quick-match placed in its vent, three times from the same sample, the actual range in feet must be carefully noted and the average of the three rounds shown thus :—

Example.

<i>First.</i>	<i>Second.</i>	<i>Third.</i>	<i>Mean.</i>
244	230	248	240 $\frac{2}{3}$

5. The mortar and shot to be carefully cleaned every round, and both to be kept well oiled when not in use.

6. Great care should be taken in reporting the trials of powder to state as correctly as possible the marks (commonly known as distinguishing marks) in every particular, which are upon the barrels from whence the samples have been drawn, especially as respects the age of the powder, not omitting the date it was received at the station.

APPENDIX VI

A LIST OF ORDNANCE DEPOTS AT VARIOUS DATES

1796

UNITED KINGDOM

Berwick	Hull	Scilly Isles
Carlisle	Isle of Man	Seaford
Chatham	Jersey	Sheerness
Chester	Keyham Point	Stirling
Clifford's Fort	Kinsale ¹	Tilbury
Dover	Landguard Fort	Tower
Edinburgh	Liverpool	Tynemouth Castle
Faversham	Pendennis Castle	Upnor Castle
Fort George	Portsmouth	Waltham Abbey
Fort William	Priddy's Hard	Woolwich
Gravesend	Plymouth	Yarmouth
Guernsey	Purfleet	

ABROAD

Annapolis	Gibraltar	Quebec
Antigua	Grenada	St. Christopher
Bahama Islands	Halifax	St. John's
Barbadoes	Jamaica	(Newfoundland)
Bermuda	Martinique	St. Lucia
Corsica	New Brunswick	St. Vincent
Dominica	Placentia	Tobago

1856

UNITED KINGDOM

Alderney	Edinburgh	Portsmouth
Armagh	Enfield	Priddy's Hard
Athlone	Enniskillen	Purfleet
Carlisle	Fort George	Stirling Castle
Charlemont	Guernsey	Tilbury Fort
Chatham	Harwich	Tipnor Point
Chester	Hull	Tower
Cork Harbour	Hyde Park	Tynemouth Castle
Devonport	Jersey	Upnor Castle
Dover	Keyham Point	Waltham Abbey
Dublin	Marchwood	Weedon
Duncannon Fort	Pembroke	Woolwich

¹ The only depot mentioned in Ireland which had its own military establishments. The two were united in 1801.

ABROAD

Antigua	Halifax	Quebec
Auckland	Hobart Town	Rideau (Canada)
(New Zealand)	Honduras	St. Christopher
Bahamas	Hong Kong	St. Helena
Balaklava	Jamaica	St. Lucia
Barbadoes	Kingston (Canada)	St. Vincent
Bermuda	Malta	Santa Maura
Cape of Good	Mauritius	Sierra Leone
Hope	Montreal	Simon's Town
Colombo	New Brunswick	Sydney
Corfu	Newfoundland	Tobago
Demerara	Point-de-Galle	Trincomalee
Dominica	Port Elizabeth	Trinidad
Gibraltar	Port Natal	Wellington
Graham's Town	Prince Edward's	(New Zealand)
Grenada	Island	Zante

1914

UNITED KINGDOM

Main Establishments

Aldershot	Devonport	Portsmouth
Belfast	Dover	Stirling
Burscough	Dublin	Tidworth
Chatham	Haulbowline	Weedon
Colchester	Pembroke Dock	Woolwich
Curragh	Pimlico (Clothing)	York

Subsidiary or Minor Depots

Alderney	Harwich	Purfleet
Blackness	Hilsea	Selby
Bull Point	Hounslow	Sheerness
Carrickfergus	Hyde Park, London	Shorncliffe
Caterham	Jersey	Southampton
Croydon	Landguard	Tilbury
Enniskillen	Lydd	Tipnor
Fleetwood	Maidstone	Tower of London
Guernsey	North Weald	Warley
Halstead		

ORDNANCE DEPOTS

ABROAD

Main Establishments

Bermuda	Gibraltar	Malta
Cairo	Hong Kong	Sierra Leone
Colombo	Jamaica	Singapore

Subsidiary or Minor Depots

Alexandria	Pekin
Cyprus	Tientsin
Mauritius	

APPENDIX VII.

EXTRACTS FROM CORRESPONDENCE BOOKS AT TIPNOR MAGAZINE
1802 TO 1854

Compiled by Staff-Sergeant Rushin, R.A.O.C.

OFFICE OF ORDNANCE,
TOWER.

23rd March, 1802.

In your demand of stores, for service of Tipnor Point Magazine, you have inserted the following particulars, but have not specified the number of each article required viz :—Long open Wheelbarrows, Bushel Baskets, and Half Bushel Do. I have therefore to request you will inform me by return of post what number of each article will be wanted for the service of the present year. You have also added the article Duck for Trousers. On the 11th January last you were supplied with 80 yards of this article—be pleased to say what number of yards in addition thereto will be wanted for this year. With respect to the 10 Watch Coats demanded I beg to acquaint you that a like number was sent to you in October, and that by a late Regulation of the Board Watch Coats are allowed to be supplied only once every three years. I likewise Observe you have inserted the Article of Birch Brooms without mentioning the number required and as you were supplied with 72 in October you will be pleased to inform me what further supply you will want for the service of the year 1802.

ROYAL LABORATORY,
WOOLWICH.

21st April, 1802.

I am directed by the Comptroller to desire you will let him have an exact account of the quantity of Gunpowder and Small Arm Cartridges which you receive from each Ship of War, including those which have already been or may be from time to time disarmed at your place in Consequence of the Peace.¹

P.S. The necessity of knowing the names of the Ships from which the powder and Cartridges are received now the fleet is disarming, is to enable the Comptroller upon any sudden emergency to report to the Master General and Board of Ordnance the Quantity of Gunpowder and Small Arm Ammunition which will be required to re-equip such a number of Ships of each Rate as may now be disarmed.

¹ The Peace of Amiens in 1801.

OFFICE OF ORDNANCE.

7th August, 1803.

I am directed by the Master General and Board to acquaint you that it appears to them advisable at the present crisis that the persons belonging to the Civil Establishment of the Ordnance at the different Stations in Great Britain should form themselves into volunteer corps and to act under the orders of the Master General and Board: you will therefore be pleased to communicate this opinion to the several persons belonging to the Establishment under your Superintendence and cause them to be enrolled as soon as possible.

OFFICE OF ORDNANCE.

1st September, 1803.

I am directed by the Board to signify their desire that you make immediate enquiry whether any Musquets, Carbines or Pistols of the description used in His Majesty's Service, can be manufactured at or in the neighbourhood of your station and that you report the result of your Enquiry stating the number and Description of Arms which can be furnished in any given period with the prices of the same.

OFFICE OF ORDNANCE.

27th January, 1804.

The Board of Ordnance finding that very little attention has hitherto been paid, or pains taken to ascertain the state of the stores forwarded to the Tower as Unserviceable from several Ordnance Stations at Home and Abroad, and that in many instances, a considerable number of Articles might have been repaired and rendered again fit for service, I have their Commands to desire that when you have reason to suspect any Stores to be unfit for service, you will cause them to be carefully examined in your presence, by Artificers who are competent Judges of the articles and, that if in their opinion they are worth repairing and can be rendered fit for service, you will cause the same to be repaired accordingly; I am also directed to communicate to you the Board's positive Commands that on no account or under any pretence whatever, shall any stores be condemned as unfit for service until they shall have undergone a very careful and minute inspection by competent Judges, and shall be deemed by them to be utterly unserviceable. I am further to acquaint you that if at any time it shall be discovered you have neglected or do not pay proper attention to these orders, you will incur the severest censure of the Board.

OFFICE OF ORDNANCE,
TOWER.

16th May, 1804.

I am to inform you that the following deduction has been made from your accounts viz :—

£175 fo. 185 On account of Incidents between 1st July and 30th September, 1803

Voucher 4 Paid Beer for Labourers £0-7-0.
As same is an unprecedented charge.

OFFICE OF ORDNANCE,
TOWER.

25th October, 1804.

I have examined your Ledger for the year 1803 and herewith enclose my remarks upon it, which you will be pleased to compare with your rough Ledger, and then return it to me with your answers in the opposite page.

The Copper Nails should be 1,000 for so they stand issued in Our Books, but you have entered them in your Ledger only 100 both on the receipt and Issue side. The spun yarn I conclude is right but you must send me a voucher. The Ball Cartridges I also want vouchers for but they are wrong Entered. They ought to have been entered as follows :—

When you have occasion to Transfer Articles from the Servble to the Unsble Column you will please to observe the above method and make two certificates in the following manner.

Certificate of Receipt.

“ I . . . do certify that the following Musquet Ball Cartridges having been found Unserviceable upon Examination are Received from Transfer on the Unsble Column.

		Unsble.
Musquet Ball Cartridges	{ English	20,000
	{ French	2,400
(Sgd).....		”

Certificate of Issue.

“ I . . . do certify that the following Musquet Ball Cartridges having been found Unserviceable upon Examination are Issued to Transfer to the Unsble Column.

		Unsble.
Musquet Ball Cartridges	{ English	20,000
	{ French	2,400
(Sgd).....		”

You have not sent me a Voucher for Articles Expended. All Articles issued to the Cooper he should sign a Voucher for, or any other Artificer that you may occasionally issue Tools to should always Sign for the same. Articles expended you are to Certify for. With respect to Mops and Brooms you have entered the Receipt of them only in page 4 and 8, but the issue appears in 4, 8 and 15. In page 15 there are 28 Mops and 59 Birch Brooms Issued but none Recd, and for which I have no voucher. In page 4 I find 92 B. Brooms expended, and 168 Recd., leaving a remain of 76. In page 8 I find 72 Mops Expended and 108 Recd., leaving a remain of 36, but no Voucher of the expenditure of the Articles—I think your best way will be to enter the receipts and Issues of these articles in your page with the Coals and Candles, and leave them entirely out in page 4 and 8.

You will also observe in my statement of the Musquet Cart-ridges, I have put opposite Jan. 1st. the Word State, which you should call it, not Remain, beginning your Ledger with the Word State, 1st January and ending with the Remain 31st December. You will be so obliging as to send me the Vouchers required when you return my remarks; I have been thus particular in order to put you into a right method of keeping your Ledger.

OFFICE OF ORDNANCE.

28th March, 1806.

The general practice of washing the floors of Barrack Rooms having been found very prejudicial to the health of the soldiers, by exposing them to a damp atmosphere, I am directed to signify the Board's Commands that that custom be forthwith discontinued and that in place of it you will cause the Barrack Floors to be dry rubbed which has been found to have a contrary effect to the former mode. You will accordingly make a demand upon the Board for the Articles you will require in consequence of the foregoing orders.

OFFICE OF ORDNANCE.

17th October, 1810.

The Master General having appointed Mr. Drury from Scarborough Castle to succeed the late Mr. Crew as Storekeeper at Tipner Point Magazine, I have it in command to acquaint you therewith and that Mr. Drury has been directed to proceed to his duty immediately. I am to add that proper persons will forthwith proceed from the Tower to Tipner Point to take a Remain of the stores there in order that the charge of Mr. Drury may be correctly formed.

OFFICE OF ORDNANCE.

7th April, 1813.

I have received the Board's commands to desire you will cause four millions of Musquet Ball Cartridges to be held in readiness to be embarked on Board Transports which will be appointed to convey them to Corunna, consigned to Colonel Burke.

OFFICE OF ORDNANCE.

27th April, 1814.

I am directed to signify the desire of the Master General and Board that you will report immediately for their information what reduction can be made in the number of Artificers or Labourers employed under your direction supposing peace with France to be concluded.

OFFICE OF ORDNANCE.

19th April, 1816.

The Master General and Board being of opinion as peace is established and a considerable reduction has been made in the prices of the necessaries of life, that the advance of sixpence per day, authorised by His Lordship's and the Board's order of the 10th August, 1812, in consequence of the high price of provision, to be paid to each of the Masters or Foremen of Artificers, Artificers and Foremen of Labourers in the Ordnance Service and of four pence per day of each Labourer should be discontinued, but that no alteration should be made in the division of the pay into six days or in the other arrangements settled by the order of 10th August, 1812, before mentioned.

I have it in command to signify the same for your information and guidance and to state to you that the additional pay to the persons above mentioned is to be discontinued on the 1st May, next.

OFFICE OF ORDNANCE.

4th June, 1819.

An instance having occurred wherein an officer of the Ordnance Department has been concerned with private individuals in the purchase of Ordnance property put up to the Public for sale, contrary to the Board's Regulations, I am commanded to acquaint you therewith and to signify the Board's positive orders that no person, Civil or Military, in their service shall purchase stores or other property which may be in future disposed of by public sale,

OFFICE OF ORDNANCE.

30th November, 1819.

His Grace the Master General having been pleased to direct that from this date no supplies of Arms or Ammunition shall be forwarded from any of the Ordnance Depots without a Military Escort to protect them in consequence of which decision it will be necessary that the Storekeepers or persons having charge of such depots should make timely applications to the Commanding Officer of Artillery in the district or neighbourhood to furnish the escort required, I have it in command to acquaint you therewith and to notify His Grace and the Board's desire that you will act upon the arrangement upon all occasions of issue of ammunition in future ; should the Commanding Officer of Artillery be unable to afford the assistance described or in the event of there being no such officer in the District, the application for an escort must be addressed to the General Officer Commanding the Troops.

OFFICE OF ORDNANCE.

13th April, 1821.

It having been communicated to the Civil Department by a General Order of the Board dated 28th July 1801, that in consideration of the addition which was then made to the salaries of the respective officers and others employed at Our Ports, certain charges, which before that period had been made and admitted in the accounts of the Storekeepers should from that time cease, amongst which items were included all charges for unserviceable gun carriages, it was not without surprise that the Master General and Board learnt by a recent enquiry at Sheerness, that although the charges in lieu of old Gun Carriages had been discontinued in the Storekeeper's Accounts yet the Respective Officer there had been in the habit of sharing amongst them the refuse wood arising from the breaking up of Old Gun Carriages, and although the Master General and Board trust that it is at this station only where such a practice could prevail, His Grace and the Board have nevertheless directed that it shall be declared in the General Order to the Department as their express commands that if any such practice should exist at any other station it shall instantly cease, and that the wood arising from the breaking up of Gun Carriages, or from any other source, and which may not be applicable to any purpose of service shall be brought to account and sold by public auction for the benefit of the public when sanctioned by the Board, and His Grace and the Board desire that every person in the Department will fully understand that there are not

any advantages or perquisites of any description to be made or allowed in the Ordnance Department beyond the Established Salary, Gratuity and Allowance for House Rent and Coal and Candles and for Stationery, and further that any person who, after this order, shall be found guilty of such malpractice will be instantly dismissed the Service. I am directed to desire you will circulate this order to every individual employed under your direction and acknowledge the receipt of it.

OFFICE OF ORDNANCE.

9th May, 1823.

It having been found on examination of the Accounts from Gibraltar, that a charge has been made for a "Garrison Gunner" but who has always been termed in the Accounts as a "Laboratory Foreman" and as the Practice of charging men under one character and actually employing them in another, is manifestly improper, and should be discontinued wherever it may obtain, for if allowed to continue neither the Board and those who have to do with the Accounts can ever know what services are actually performed nor can correct report be made of any fact wished to be ascertained by reference to the Accounts: and concealment of facts by misrepresentation in the Vouchers must ever lead to inconvenience and embarrassing results.

I am commanded to communicate the same to you and that the Board strictly forbid this Practice being pursued at any Station whatever.

OFFICE OF ORDNANCE.

18th June, 1823.

I am directed to notify the commands of the Master General and Board to the Respective Officers at the several Stations both at Home and Abroad, that at the time they make their Annual Perambulations of the Ordnance Property at those stations respectively, they cause all the roads belonging to the Ordnance and over which a passage to the public may be admitted as a convenience and thro' the favour of the Master General and Board to be shut up on that day for 24 hours when the Perambulations take place, and that registry thereof be made in order that the right of the Ordnance may be preserved.

I am therefore to desire that you will see that this order is strictly fulfilled on the occasions referred to.

OFFICE OF ORDNANCE.

24th November, 1823.

It being the intention of the Master General and Board to substitute in Barracks, Single Bedsteads made of iron of 6 ft 6 inches

300 EXTRACTS FROM CORRESPONDENCE

long by 2 feet 3 inches wide, for the Double Berths and Bedsteads now in use. I am directed by the Board to desire you will, with assistance of the Commanding Officer of the Troops and the Engineer Officer minutely inspect every room in Barracks under your charge, and ascertain the best manner in which bedsteads of the above dimensions can be placed so as to sacrifice as little accommodation as possible by the measure.

Should there be no Engineer Officer on the spot, the Clerk of Works will give his assistance, or if there is no Clerk of Works at the Station, you will with the assistance of the Commanding Officer of the Troops, make out as clear a Report as you can under the circumstances.

A detailed report is required stating the manner in which the Bedsteads are proposed to be placed in the room, the total number of bedsteads that will be required and the accommodation which must absolutely be lost.

You will also report whether there are any Cooking Houses or Mess Rooms at the Barracks under your charge, and whether they are sufficient for the use of the troops, when the Barracks are fully occupied.

If there should be more than one Barrack under your charge, or if one Barrack should be constructed for both Cavalry and Infantry, you will make a separate report upon each.

OFFICE OF ORDNANCE.

16th December, 1824.

It appearing to the Board that the term "Respective Officers" of the Ordnance has been misunderstood, and in consequence, misapplied at several of the outstations at Home.

They are pleased to direct an explanation to the following effect to be made to the officers and Departments concerned, viz :—

When orders are addressed to the Respective Officers at any home station they are to be understood to apply to the body of officers, consisting of the Heads of Departments as under-mentioned :

The Commanding Officer of Artillery, Royal Engineers, The Storekeeper and Deputy Storekeeper, if there is one at the Station.

And, in case a reference be made requiring the aid of any two or more departments, and not the whole, to carry into effect the Board's orders, those orders will be jointly addressed to the heads of those departments concerned, with directions to proceed upon the execution of them.

This decision will, of course, equally apply at Stations where the officer in charge of the Civil Department has the designation of Deputy Storekeeper only, and in regard to those where there are both a Storekeeper and Deputy Storekeeper, the latter is named to attend as one of the respective officers because he fills the office formerly termed Clerk of the Cheque ; and more particularly on general grounds, when the Artillery, Engineer and Civil Officers meet on the 10th of the month to consider the propriety of Imprests to be granted, the Deputy Storekeeper, who is bound to have a thorough knowledge of the accounts and is a party to the payments made, ought to be present at the Conference, as he is held responsible by the Board that any irregularity in conducting the Civil business if it come to his knowledge, be immediately reported.

OFFICE OF ORDNANCE.

1st May, 1827.

Field Marshal the Duke of Wellington having laid at His Majesty's feet his resignation of the office of Master General of the Ordnance, avails himself of the opportunity of expressing his thanks to the Lieutenant General and Board of Ordnance, to the General Officers, and Officers and Troops employed under the Ordnance and generally to all the Gentlemen employed in the Civil Department, for their uniform support, good conduct, and obedience during the period that he has presided over the Ordnance.

The Field Marshal took charge of this Department at the close of the operations of an extended and eventful war, when it became the duty of the Master General and Board, to reduce all the Establishments to the lowest scale consistently with the Public security, and make many alterations and reforms which time, experience, and altered circumstances had suggested, and economy had rendered necessary.

The Field Marshal must do all classes and Descriptions of the Officers acting under the Ordnance, Military as well as Civil, the justice to declare that they have submitted to the privations consequent upon these alterations and reforms with the utmost cheerfulness, and have aided him and the Board of Ordnance in carrying them into execution, with equal zeal and ability.

Altho' circumstances have rendered it necessary for the Field Marshal to separate himself from the Ordnance Department, he begs to assure all those employed therein, that he will always feel most anxious solicitude for their honour and welfare.

302 EXTRACTS FROM CORRESPONDENCE

OFFICE OF ORDNANCE.

26th August, 1831.

Adverting to the Provisions of the Act of 52nd Geo : 3rd Geo Cap 66 requiring Officers on the Civil Establishment of the Ordnance, to whom pecuniary responsibility is attached, to give notice of the deaths or bankruptcy of their sureties, in the event of such a contingency.

I am directed to signify the Board's desire that you will report immediately whether your sureties are living, and solvent, and that you will also make a like report by the 1st of March in every future year, to enable them to perfect the general account to be annually rendered to the Treasury in that month.

OFFICE OF ORDNANCE.

6th May, 1836.

The Master General and Board having authorized Sir John Webb, Director General of the Ordnance Medical Department to proceed to Portsmouth to ascertain by personal inspection and enquiry the particulars of information necessary to enable him to furnish the Master General and Board with a full and particular Report as to the practicability of extending to the Stations in the United Kingdom the principle which is to be applied to the Ordnance Hospitals on Foreign Stations, namely the placing of medical charge of the Military and Civil branches of the Ordnance under the Surgeons of the Line at Stations where the number of patients does not appear to be under a separate establishment necessary.

I am directed to appraise you of the same and to desire you will afford Sir John Webb every information and facility in the conduct of his enquiries he may need from you, so far as you may be able to assist him.

OFFICE OF ORDNANCE.

7th April, 1845.

The Board being desirous of ascertaining the state of the plantations of Walnut Trees on the Ordnance Land at the several stations, I am directed to request you will transmit a return of the number of trees at present growing on the Ordnance Property distinguishing them in three classes, viz :—

- 1st. Those under 18 inches in girth at 5 ft from the ground.
- 2nd. Those between 18 and 36 inches in girth at 5 ft from the ground.
- 3rd. Those above 36 inches in girth at 5 ft from the ground.
and giving the separate cubic contents in the *body* of trees of the 3rd class.

You will have the goodness to accompany the return with such observations as may appear necessary upon the state and condition of the trees generally, whether the soil and situation are favourable and if so, whether there are any vacant spots, where in your opinion a further number and how many Walnut Trees might be planted with a fair prospect of successful growth, and without interfering with the general objects of the public service at the station.

OFFICE OF ORDNANCE.

30th September, 1846.

With reference to the Periodical Returns of Camp Equipage and intrenching tools which you are required to make.

I am directed to signify the Master General's and Board's desire that, as several articles have been hitherto omitted in such Returns, and others inserted which do not appertain to this class of Stores, the Returns may henceforth include the articles mentioned in the accompanying list.

I am at the same time to acquaint you that the Master General and Board have ordered the following arrangements connected with the preservation and efficiency of Camp Equipage to be adopted in future :—

Pins and Mallets for Circular Tents are to be packed in Valises made of strong canvas, of a pattern proposed by Mr. Stacey of the Principal Storekeeper's Department.

The door of the tent is to be fastened with Hooks and eyes, instead of strings : and the iron tubes of the poles are to be joined with rivets.

The marking of the valises of any tents with address or consignment is to be discontinued, and, whenever an address or other temporary mark shall be necessary, it is to be written upon a label and attached securely to the package which label can be removed when done with.

Axes, Pickaxes, and other intrenching tools which require handles, are to be fitted to them, and Bill Hooks and other edge tools are to be ground sharp and made fit for immediate use, and should the stores of axes and pickaxes be large the handles are to be kept separate from the heads to the extent of one third the number to save store room.

The lids of packing cases are to be fastened with screws instead of nails, the old screws being always preserved if serviceable, and whenever a case is emptied of its contents, useless marks to be obliterated or destroyed, and the lid replaced with two or three screws to preserve it for further use.

304 EXTRACTS FROM CORRESPONDENCE

An application has been made by the Master General and Board to the Commander-in-Chief requesting that a general order may be issued to Regiments prohibiting the marking regimentally or otherwise of tents issued for temporary service as well as the marking of heads of Canteens by cutting or other indelible marks ; and, directing marks, if necessary, to be made on the canteen with paint.

OFFICE OF ORDNANCE.

9th January, 1847.

It appearing to the Master General that considerable difficulty exists in judging the merits of claims which are submitted to him for promotion, as well as of applications for additional assistance which are from time to time brought forward in various branches of the Department, for want of accurate information with respect to the character and efficiency of the officers and clerks on the Civil Establishment of the Ordnance.

And his Lordship having deemed it expedient to direct the adoption of a system of Periodical Confidential Reports similar to that which prevails in the Naval and Military Services.

The Board command me to acquaint you that the several Heads of Departments at the Tower and the Board's Secretary will be called upon for such information as their several offices may afford, as to the manner in which the business of your station is conducted, and the report to the Master General will be framed accordingly. It will be sent to him direct on the 1st January in each year but that for the present year will be furnished immediately.

And as this is a measure which will evidently tend to the great advantage of able, zealous and meritorious officers, it will be the means of exposing those who are neglectful of their duty, and unfit for the trust reposed in them.

OFFICE OF ORDNANCE.

22nd April, 1854.

Her Majesty, having by Royal Proclamation dated 15th instant, commanded the observance of Wednesday next the 26th instant, as a general day of Humiliation and Prayer throughout the United Kingdom in consequence of the War.

The Board hereby communicate the same to you with instructions to observe the day as Good Friday is usually kept in the Department.

APPENDIX VIII

SCALES OF CAMP EQUIPMENT—PRE-CRIMEA

The sole scale of any kind in Ordnance Regulations 1823 is that for practice ammunition.

	CAVALRY		INFANTRY.		LIGHT INFANTRY.		RIFLES.
	Summer.	Autumn.	Summer.	Autumn.	Summer.	Autumn.	
Ball	10	—	20	10	30	20	60
Blank	30	20	40	20	40	20	—
Flints	2	1	2	1	2	1	3

Later on the following scales of camp equipment appear :

INFANTRY

- 1 Hospital Marquee with double roof per regiment.
 - 1 Double Marquee with porchway per field officer.
 - 1 Round Tent per other officer.
 - 1 Round Tent per 15 men plus 4 per regiment for guards, etc.
 - Canteens and straps
 - Haversacks
 - Blankets
 - Bill Hooks (for cutting up fire-wood)
 - Spades
 - Shovels
 - Pickaxes
 - Felling Axes
 - Camp Colours
 - Drum Cases
 - 1 Packsaddle and 2 panniers for the regimental surgeon.
- } 1 per man.
- } 5 per battalion.
- 1 per company
- 2 per company and 2 per regiment.

CAVALRY

On similar lines but with provision for stable necessities and horse lines.

APPENDIX IX

ROYAL WARRANT OF 1792

Necessaries provided Free

INFANTRY

	£	s.	d.
One Pair Black Cloth Gaiters, per year		4	0
One Pair Breeches, besides the Ammunition Pair		6	6
Altering Clothing to fit		2	6
One Hair Leather			2½
Proportion of Expense for Watch Coats per Year		1	0
A Worm, Turnscrew, Picker and Brush, at 1s. 3d. in five years, per year			3
Emery, Brickdust and Oil, per year		2	6
		<hr/>	
		16	11½

The articles in the last two categories, for cleaning arms, to be provided by the Ordnance or compensated for in money.

CAVALRY

	£	s.	d.
One pair of leather breeches or two pairs of shag breeches every two years, value £1 6s. Per annum	13	0	
For Stable Jacket, Trowsers and Foraging Caps every two years 15s. Per annum		7	6
Horse Cloth 6s. 6d. Surcingle 3s. 6d. in 6 years. Per annum		1	8
Feeding Bag 1s. Watering Bridle 3s. 6d. Collar and Log 6d. in six years. 5/- Per annum			10
		<hr/>	
		1	3 0

Provided at the Soldier's Expense

INFANTRY

	£	s.	d.
One Pair Black Gaiters, per Year		4	0
Two Pair Shoes, per Year, at 6s. per pair		12	0
One Pair Stockings, or Two Pair of Socks		1	6
Soleing and Heeling, per year		4	0
Two Shirts, per Year, at 5s. 6d. per shirt		11	0
A Foraging Cap, per Year		1	3
A Knapsack at 6s. once in 6 Years		1	0
Pipe Clay and Whiting, per Year		4	4

APPENDIX IX

307

	£	s.	d.
A Clothes Brush, 1s. once in Two Years			6
Three Shoes Brushes, Per Year, at 5d. per brush	1	3	
Black Ball, per Year	2	0	
Worsted Mitts, per year		9	
A Powdering Bag and Puff, once in Three Years at 1s. 6d.			6
Two Combs per year, at 6d. per comb	1	0	
Grease and Powder for the Hair, per Year	3	0	
Washing at 4d. per Week, per Year	17	4	
	<u>£3</u>	<u>5</u>	<u>5</u>

CAVALRY

	£	s.	d.
Three Shirts and Turnovers at 6s. 6d. each per Annum	19	6	
One Stock and Clasp per Annum	1	0	
Two Pairs Worsted Stockings, 2s 5d. each per Annum	4	10	
Two Pairs of Thread or Cotton Stockings, 3s. each and Two Pair of Short Gaiters 1/8d each ; or Two Pair of Long Black Gaiters, 4s. 8d. each, per Annum	9	4	
Two Pair of Shoes, 7s. each, per Annum	14	0	
Mending do. per Annum	3	0	
Two Shoes Brushes, 6d each per Annum	1	0	
Powder, Pomatum, Soap, Combs and Razors, per Annum	12	0	
Knee Buckles per Annum		6	
Clothes-Brush, Worm, Picker, Emery, Oil, Pipe-Clay, Whiting and Blacking per Annum	16	6	
Washing and Mending per Annum	1	6	0
Mane Comb 6d. Curry Comb and Brush 3s. 8d. in Two Years per Annum	2	1	
Tailor's Bill per Annum	2	9½	
	<u>£5</u>	<u>12</u>	<u>6½</u>

APPENDIX X

COMMENTS BY THE DUKE OF WELLINGTON, SHORTLY AFTER TAKING
UP THE APPOINTMENT OF COMMANDER-IN-CHIEF IN 1842,
ON IRREGULARITIES OF DRESS AND ILLEGAL STOPPAGES OF PAY.

"The Duke of Wellington is glad to find that M. General . . . has detected and brought under notice a very objectional practice which appears to have prevailed in some of the Corps in his District, whereby unauthorised stoppages are made from that portion of the soldier's pay accounted for as 'daily pay' or 'subsistence,' and that further investigations have led to the discovery of the existence of similar practices in other Corps serving under Command.

"The orders on this subject, emanating both from the Commander-in-Chief and the Secretary-at-War, are so positive and explicit, and have been so frequently repeated, that the Duke of Wellington is surprised that any Commanding Officer should have ventured to infringe, or pretend to misunderstand them.

"The Duke of Wellington's views relative to the payment of the Troops are well known to the Army. The soldier's subsistence is to be *bona fide* paid to him daily, without any deduction whatever, and no charge, however minute or trifling is to be brought against him without its appearing in the Company's Ledger.

"With respect to the paragraph in your letter which refers to the want of a proper sealed pattern Shell jacket in some of the Corps, and the consequent impossibility of enforcing uniformity in that article of equipment, I am directed to draw your attention to the 21st Article of the Clothing Warrant, which requires that sealed patterns of all necessities are to be supplied by the Colonels of Regiments, and it is the duty, therefore, of the Commanding Officer to see that these patterns are constantly forthcoming at Inspections, but no part of the business, either of the Agents or Clothiers, to supply them except on his requisition.

"There can, however, be no mistake on this matter :—it is well known that the Shell Jacket of the Infantry is perfectly plain—a mere waist-coat with sleeves—without wings or other ornament and that it should be made of cloth of precisely the same texture and colour as their Dress Clothing—not only as the most lasting and durable, but because the careful soldier is thus able to convert his coat of the former year into a shell, and thereby to save himself the whole expense of one of the most costly articles of his equipment.

"I have been instructed to enter into this detail on this subject in consequence of its having come to the Commander-in-Chief's

knowledge that the Commanding Officers of some of the Corps serving in Ireland have not only been accustomed to exercise their fancy in the adornment of their garments, at the soldier's expense, but have had the temerity to adopt *scarlet* instead of *Red Cloth*, whereby the cost of the Shell Jacket is not only considerably increased, but every individual, however provident, is unnecessarily put to the expense of a new one every year, in order to produce uniformity in the Corps.

"The Duke of Wellington earnestly desires that you may put a stop to those very inconsiderate and irregular proceedings, and trusts, if a strict adherence to the Regulations of the Army cannot otherwise be ensured, that the whole of such unauthorised supplies may be in future thrown on the hands of the Commanding Officers, who may have ordered them.

"His Grace desires that when soldiers of the Army, or their officers, venture in any manner to alter their Dress or Appointments, so as to render them different from the established pattern, they may invariably be restored or replaced at their own expense."

These strictures had little effect. Shortly afterwards they were re-circulated in Ireland where the Lieutenant General in command found it necessary to call attention to the "extraordinary and extravagant deviations from the regulations in the service in regard to the wings of several of these Corps and indeed in them all." He again insists that there should be no departure from established patterns and refuses to accept the excuse that changes are made and charged against the soldier's pay at his own request.

APPENDIX XI

INSTRUCTIONS BY THE DUKE OF WELLINGTON WHEN COMMANDER-IN-CHIEF ON THE SUBJECT OF UNPUNCTUALITY IN THE ISSUE OF CLOTHING

HORSE GUARDS.

9th August, 1844.

The Commander-in-Chief having observed, on perusing the Confidential Reports of the Periodical Inspection of the Troops, both at home and abroad, that in numerous instances the clothing has not been issued at the period prescribed by Her Majesty's Warrant, but that its delivery has been from various causes delayed, has commanded me to draw your attention to the subject and to request that you will be pleased to require, henceforth, not only that the clothing of the whole of the troops under your command be issued on the 1st April, but that you ascertain that it is allowed to remain in possession of the non-commissioned officers and men, and is continued in constant wear from that date provided it shall have arrived at the head quarters of the regiment on or before the 10th of January immediately preceding—or within three months from the date of its receipt if its arrival shall have been delayed beyond that period—it having been ascertained that with due attention to the scale of sizes by which it is made up, a period of twelve weeks is abundantly sufficient for fitting and preparing the clothing of any regiment of infantry for wear.

With regard to the cavalry, who very generally have obtained permission to make up their clothing at the regiment, I am commanded to inform you that this privilege is granted upon the express condition that the clothing shall, in every case, be prepared for wear at the prescribed period; and that, therefore in every case in which a cavalry regiment shall be found to have failed in this respect, the permission will, in future, be withheld, and the clothing forwarded ready made from the clothier.

Commanding officers must be reminded that the clothing of the army at a stated period is an arrangement prescribed by the provisions of a Royal Warrant; and that, provided the clothing shall have been received in due time, they are no more justified in assuming the power of withholding it from the troops beyond the period specified in the Warrant than they should be in deferring the settlement of the men's accounts.

The Commander-in-Chief is of the opinion that the clothing to which the troops are entitled is not more than sufficient for their comfort and efficiency in any climate, and disapproves generally of the practice of saving portions of it, with a view to receiving compensation in money the next year, for the purpose

of furnishing new knapsacks or other articles of equipment. Such articles never can, in his Grace's opinion, be required under ordinary circumstances by a whole Corps at the same time, and as neither the efficiency or the appearance of the troops is materially improved by such general and unnecessary supplies, commanding officers are to be prohibited from adopting measures of this description, and thereby involving whole regiments in one common and frequently unnecessary expense. Soldiers should, on the contrary, be encouraged in provident habits by every possible means, and are to be allowed to wear their knapsacks and any other article purchased by stoppages from their pay until no longer in serviceable condition or capable of being repaired, and when any special case occurs in which the Commander-in-Chief may be induced to grant compensation for the whole, or any portion of their clothing, care must be taken that it is not made a reason for supplying them with any article of necessities or equipment of which they may not be in immediate want.

APPENDIX XII

THE SOLDIER'S BUDGET IN THE YEAR 1833

STATEMENT showing the ANNUAL EXPENSES of a
SOLDIER of INFANTRY, to be defrayed from the amount
of his Pay and Beer Money when serving Abroad or at Home,
when the Ration is less than 6d.

EXPENDITURE

<i>According to His Majesty's Regulations :</i>	£	s.	d.
1 pair of linen trowsers	4	8	
1 pair of boots	9	6	
3 shirts @ 4/9d each	14	3	
1 red jacket	7	6	
3 pairs stockings, 2/- each	6	0	
1 stock and clasp, 1/6d, to last 2 years	9		
1 pair braces, 1/3d ditto	7	½	
1 knapsack, 11/6d, to last 4 years	2	10	½
1 forage cap & peak, 2/6, to last 2 yrs	1	3	
2 shoe & 1 clothes brush, 2/4 ditto	1	2	
Blacking @ 6d. per month	6	0	
Button stick and brush	6		
Sponge, 3d, comb, 6d.	9		
Razor 1/- to last 3 years	4		
Coat straps, 1/6d ditto	6		
Gloves	1	0	
Knife, fork and spoon	1	0	
Case for ditto, and including razor, comb, button stick, and brush, to last 4 years			3
Mess tin & cover, 2/-, to last 2 years	1	0	
Alteration of clothing			6
Browning of arms			3
<i>Additional articles which a Soldier cannot do without :</i>			
1 pair grey trowsers	9	0	
1 shirt	4	9	
2 towels	1	2	
1 pair scissors, 1/- to last 2 year			6
1 hair brush, 1/- ditto			6
Pipe-clay @ 1d. per week	4	4	
Soap, ditto	4	4	
Shoe mending	18	0	
Tailor's repairs	1	0	
Proportion of table cloths			6

APPENDIX XII

313

	£	s.	d.
Tin case for small book, 3d., to last 3 years			1
Needles, worsted, &c for repairing stockings	1	0	
Barrack damages @ 2d. per month	2	0	
Earthenware plates, etc.			6
Marking necessities			6

Messing, etc.

$\frac{3}{4}$ lb meat @ 4 $\frac{1}{2}$ d and 1 lb bread @ 1 $\frac{1}{2}$ d a day for 1 year	9	2	6
Potatoes, meal, salt, etc @ 1d. a day	1	10	5
Tea, coffee, or milk for breakfast, @ 1d. a day	1	10	5
Washing @ 1/4d a month		16	0
Subscriptions towards charitable purposes etc.		2	0

Total £18 10 2

INCOME

	£	s.	d.
Pay @ 1/- a day plus 1d. beer money	19	15	5
Deduct expenditure	18	10	2

Balance in favour of the Soldier £1 5 3.

APPENDIX XIII

WEIGHT OF APPOINTMENTS, &C., AT THE TIME OF THE CRIMEA

		lbs.	ozs.		
On the Person.	Regimental cap complete	1	2	}	10 0
	Coatee and shoulder knots	2	15½		
	Pair Summer trowsers	1	8		
	Pair boots	2	8		
	Shirt	1	2		
	Socks	—	4½		
	Stock	—	4		
	Braces	—	4½		
Knapsack and Necessaries.	Knapsack and straps	4	13	}	17 0¾
	2 Shirts	2	4		
	2 Pair socks	—	9½		
	1 Pair cloth trowsers	1	15		
	1 Shell jacket	1	8¾		
	2 Towels	—	12		
	1 Forage cap	—	7½		
	1 Holdall contg. { Button-brush and stick Sponge Comb Razor Shaving- Brush Knife, fork & spoon	—	13¾		
	1 Pair mitts	—	2¾		
	1 Pair boots	2	8		
	2 Blacking brushes	—	8		
	1 Cloth brush	—	3½		
	1 Case blacking	—	7½		
Service Equipment.	1 Canteen & straps	1	7½	}	7 4½
	Haversack	—	6½		
	Water bottle	1	8		
	Great coat	3	14½		

APPENDIX XIII

315

	lbs.	ozs.	
Appointments. { Firelock—percussion	9	10	} 20 8 $\frac{3}{4}$
Bayonet	—	15	
Scabbard for do.	—	5	
Gun sling	—	5 $\frac{1}{2}$	
Waist belt & plate	—	12 $\frac{3}{4}$	
Pouch	2	6	
Pouch belt	—	8 $\frac{3}{4}$	
60 rounds Ball cartridge	5	9	
Percussion cap pockets	—	$\frac{3}{4}$	

Total 54 14

Service Equipment { 2 days' biscuit	2	—	} 9 0
Blanket	4	—	
Cooking pot	3	—	
			<u>63 14</u>

GRAND TOTAL

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